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## HIPPOCRATEA, I

BY WILLIAM ARTHUR HEIDEL

THE following notes are a by-product of studies undertaken with no thought of conjectural emendation. My sole desire had been to comprehend the meaning of the "Hippocratic" treatises and to derive from them such elucidation as they might afford of the thought, scientific and philosophic, of the fifth century B.C. After ten years of almost continuous study of the *Corpus Hippocrateum* I recently sorted out the large mass of notes which had gradually accumulated, and found to my surprise several thousand which related to questions of text and interpretation. A preliminary examination showed that much the largest part of these suggestions referred to the text of Kühn's edition, in which I had begun my reading of Hippocrates. On comparing my suggestions with the text of Littré, I was relieved at finding that the latter scholar, to whom all students of Hippocrates are deeply indebted, had by his wider acquaintance with the MSS. confirmed and adopted the readings I had thought to propose in quite ninety per cent of the cases. Further large reductions in the number of passages to be considered resulted from a comparison of my suggestions with the texts of Ermerins, Kühlewein, Gomperz, Nelson, Gundermann, and Villaret, besides the critical discussions of such other scholars as were accessible to me. It is doubtless too much to hope that the notes which remain will in proportional number commend themselves to the judgment of others, but I am encouraged to believe that in the main I have rightly interpreted the text and caught the meaning of the authors, even when, as in reading after Kühn, I was seeing through a glass darkly. May the editors of Hippocrates for the *Corpus Medicorum* derive some benefit from the discussion of the passages herewith presented for their consideration. Questions of orthography have in general been ignored in the belief that we are not yet in a position to settle them with even approximate certainty. The conjectural critic is here more fortunate than the editor, for whom a decision of such matters, however arbitrary it may be, is a practical necessity.

## ΠΕΡΙ ΑΡΧΑΙΑΣ ΙΗΤΡΙΚΗΣ

9 (I, 588 L.) καὶ εἰ μὲν ἦν ἀπλοῦν, ὥσπερ ὑφήγητο, ὅσα μὲν ἦν ἰσχυρότερα, ἐβλαπτεν, ὅσα δ' ἦν ἀσθενέστερα, ὠφέλει τε καὶ ἔτρεφεν καὶ τὸν κάμνοντα καὶ τὸν ὑγιαίνοντα, εὐπετές ἂν ἦν τὸ πρᾶγμα.

It seems to me very likely that the author wrote καὶ εἰ μὲν . . . ὥσπερ ὑφήγητο, <εἰ> ὅσα μὲν κτλ. Then ὑφήγηται (M) would have arisen from ὑφήγητοι, ι being a relic of εἰ. The proposed alternative to εἰ μὲν was omitted, or rather given in an altered form. Gomperz, *Philol. LXX*, p. 233, proposes <καὶ>, which seems to me less satisfactory.

9 (I, 590 L.) διὸ ἔργον οὕτω καταμαθεῖν ἀκριβέως, ὥστε σμικρὰ ἁμαρτάνειν ἔνθα ἢ ἔνθα, κἂν ἐγὼ τοῦτον τὸν ἱητρὸν ἰσχυρῶς ἐπαινέοιμι τὸν σμικρὰ ἁμαρτάνοντα.

It is, of course, possible that the author used σμικρὰ in both sentences in the same sense, to wit, "a little only," which it undoubtedly bears in the latter; but it would clearly add point to the whole if he added <μῇ>, as I believe he did, after ὥστε.

12 (I, 596 L.) οὗ φημι δὲ δεῖν διὰ τοῦτο τὴν τέχνην ὥς οὐκ εἴσαν οὐδὲ καλῶς ζητεομένην τὴν ἀρχαίαν ἀποβάλλεσθαι, εἰ μὴ ἔχει περὶ πάντα ἀκρίβειαν, ἀλλὰ πολὺ μᾶλλον διὰ τὸ ἐγγὺς οἶμαι τοῦ ἀτρεκεστάτου δύνασθαι ἡκεῖν λογισμῷ ἐκ πολλῆς ἀγνωσίης θανμάζειν τὰ ἐξευρημένα, ὥς καλῶς καὶ ὀρθῶς ἐξεύρηται καὶ οὐκ ἀπὸ τύχης.

After ἀτρεκεστάτου M adds ὁμοῦ, A οὐ. Both readings are, of course, wrong, but it seems clear that something has been lost. What the author wrote may be inferred from Περὶ διαίτης Γ, 67 (6, 594 L.) ὥς μὲν οὖν δυνατὸν εὐρεθῆναι ἐγγιστα τοῦ ὅρου ἐμοὶ εὐρηται, τὸ δὲ ἀκριβὲς οὐδενί. Here ἐγγιστα τοῦ ὅρου is equivalent to ἐγγὺς τοῦ ἀτρεκεστάτου <ὅρου>, which our author presumably wrote. Gomperz suggested οὐ, but few will think it acceptable.

20 (I, 620 L.) λέγουσι δὲ τινες ἱητροὶ καὶ σοφισταί, ὥς οὐκ εἴη δυνατός ἱητρικὴν εἶδέναι ὅστις μὴ οἶδεν, ὃ τί ἐστὶν ἄνθρωπος καὶ ὅπως ἐγένετο πρῶτον καὶ ὁπότεν συνεπάγη ἐξ ἀρχῆς· ἀλλὰ τοῦτο δεῖ καταμαθεῖν τὸν μέλλοντα ὀρθῶς θεραπεύσειν τοὺς ἀνθρώπους.

Ermerins reads *ὡς οὐκ ἔστι*, without good reason; but he defends *δεῖ* on the ground that, like *ἔστι* (*ἐῖη*), it depends on *ὡς*. So far as I know, all editors retain *δεῖ*, which ought clearly to be altered to *δεῖν*. In reading the proof sheets I note that Gomperz, *Philol.* LXX, p. 237, also reads *δεῖν*. Probably we should read also <τὸ> *πρῶτον*.

## ΠΕΡΙ ΑΕΡΩΝ ΥΔΑΤΩΝ ΤΟΠΩΝ

13 (2, 56 L.) *περὶ μὲν οὖν Αἰγυπτίων καὶ Λιβύων οὕτως ἔχειν μοι δοκεῖ.*  
 13 *περὶ δὲ τῶν ἐν δεξιῇ τοῦ ἡλίου τῶν ἀνατολέων τῶν θερινῶν μέχρι Μαιώτιδος λίμνης.*

The lacuna toward the close of c. 12 has long been noted. Wilamowitz has shown that the remainder of the chapter relates to Egypt and Libya, as the last sentence of c. 12 states. He has also correctly seen that the reference to the sun-rise is based not upon geographical determinations resulting from close astronomical observations, but upon loose popular phraseology. For *ἀνατολέων τῶν θερινῶν* our MSS. give *ἀ. τ. χειμερινῶν*. This has been altered merely to enable us to connect it with *μέχρι Μαιώτιδος λίμνης*. But is such a connection possible? There can be no doubt, it would seem, that when our author says *περὶ δὲ τῶν ἐν δεξιῇ τοῦ ἡλίου τῶν ἀνατολέων* he refers to a region to the south of the sun-rise, as seen from Greek lands. After the discussion of Egypt and Libya we expect at least a reference to the southeast (that is to say to the southwestern part of Asia). Whether our author possessed a knowledge of Syria and Arabia sufficient to warrant more than a general reference may well be doubted; but so much at least I think we must suppose him to have given here. Just where the lacuna, which I confidently assume, began, or what it contained, I do not profess to know. Perhaps it was quite brief, not longer than this: *περὶ δὲ τῶν ἐν δεξιῇ τοῦ ἡλίου τῶν ἀνατολέων τῶν χειμερινῶν* <ἔασω· *περὶ δὲ τῶν ἐν τὸς τῶν ἀνατολέων τῶν χειμερινῶν καὶ τῶν θερινῶν*> *μέχρι Μαιώτιδος λίμνης* — *οὗτος γὰρ ὅρος τῆς Εὐρώπης καὶ τῆς Ἀσίας* — *ὧδε ἔχει περὶ αὐτῶν*. In this case, since the author's narrative follows the direction from south to north, there would be no difficulty in the phrase *μέχρι Μαιώτιδος λίμνης*, which as the northern boundary of "Asia" can hardly follow *ἐν δεξιῇ τοῦ ἡλίου τῶν ἀνατολέων*, especially if, as we seem bound to do, we read *τῶν χειμερινῶν*.

This passage is important in relation to the inquiry into the sources for the geographical and ethnographical knowledge displayed in this treatise. The reference to the solstices, as we have seen, is such as to preclude the assumption that it rests on astronomical observations. The conjecture  $\theta\epsilon\rho\iota\nu\omega\nu$  for  $\chi\epsilon\iota\mu\epsilon\rho\iota\nu\omega\nu$  is based on the false hypothesis that our author represents the scientific tradition, which had more or less accurately marked the zones. Our doxographic tradition is, as usual, vague or contradictory on this head; for it attributes to Parmenides the first projection of zones, and to Anaximander the discovery of the gnomon, and hence of the solstices and equinoxes. As to the theory of zones, it presupposes a spherical earth; but Anaximander held that the earth's surface was approximately flat, and it is not quite certain that Parmenides did not share his view. On the other hand it was quite possible with the gnomon, which Anaximander undoubtedly knew, to determine the solstices and equinoxes as chronological periods. Anaximander is credited also with the discovery of the inclination of the ecliptic, which was indeed a natural consequence of the observation of the solstices, but did not necessarily imply geographical zones or the sphericity of the earth. The statement that Anaximander set up a gnomon at Sparta, if true, would be important as suggesting that he sought data for the geographical determination of solstices and equinoxes, since a gnomon must vary in construction according to latitude. The story may, however, be a fiction based upon the supposition, true or false, that the bronze  $\pi\iota\nu\alpha\chi$  displayed at Sparta by Aristagoras (Hdt., 5, 49) was the chart of Anaximander. At all events we have no evidence that the charts of Anaximander and Hecataeus marked the tropics; but even if that should have been the case, there is no reason to think that the author of our treatise drew upon either the charts or the geographical texts of the Milesian school. The arrangement of parts of our treatise has undoubtedly been disturbed; but it is clear that the description of lands and peoples follows the direction from south to north, whereas Hecataeus (who doubtless followed the example of Anaximander), like Scylax, proceeded from north to south. We must, therefore, look elsewhere for the sources of our author; and we shall do well to consider the probability that he drew upon medical  $\acute{\epsilon}\pi\iota\delta\eta\mu\iota\alpha\iota$ , of which I have no doubt many existed in the fifth and even in the sixth century B.C.

21 (2, 76 L.) μέγα δὲ τεκμήριον αἱ οἰκέτιδες ποίεουσιν.

Wilamowitz would delete ποίεουσιν; Ermerins substitutes παρέχουσι. It would be simpler and better to insert <δ> or <α> after τεκμήριον.

22 (2, 76 L.) ἔτι τε πρὸς τούτοις ἐννουχίαί γίνονται οἱ πλείστοι ἐν Σκύθῃσι καὶ γυναικεῖα ἐργάζονται καὶ ὡς αἱ γυναῖκες <διαίτευνται> διαλέγονται τε ὁμοίως· καλεῦνται [τε] οἱ τοιοῦτοι Ἀναριεῖς.

So Kühlewein, who was, I believe, right in supplying διαίτευνται, after Gomperz, and in bracketing τε. I had independently chanced upon both points, and had another suggestion. It seemed to me probable that the source was a MS. having a standard line of 28–30 characters and that it showed  $\begin{matrix} \text{διαίτευνταί τε} \\ \text{καλεῦνται} \end{matrix}$ , and that in consequence the scribe's eyes wandered, giving rise to the omission of the first τε, and the incorrect insertion of τε after καλεῦνται. The second τε may however be due to dittography of the preceding ται.

#### ΠΕΡΙ ΑΓΜΩΝ

8 (3, 446 L.) ἐπὴν δὲ ταύτας ὑπερβάλλῃ, λύειν χρή καὶ ἐπὶ ἥσσον πιέζειν τοῖσιν ὀθονίοισιν καὶ ἐπὶ ἐλάσσοσιν ἐπιδεῖν.

We should delete the second ἐπὶ, which is due to ἐπὶ ἥσσον.

#### ΕΠΙΔΗΜΙΩΝ F

10 (5, 348 L.) καὶ ἐλπίζει καὶ ἀδοξέει.

The required sense is obvious. Crönert-Passow wrongly quotes Alex. Aphrod. in Arist. Top. 554, 2 as a parallel to ἀδοξέει; for there the word means to be of ill repute, a sense excluded in our passage. Ermerins, feeling that ἀδοξέει yielded no sense, declined to translate it. The word is, I believe, corrupt. Ionic has προσδοκέω = προσδοκάω, and I suspect that we should here read the parallel form ἀδοκέει, though it is not otherwise attested.

#### ΠΕΡΙ ΤΕΧΝΗΣ

12 (6, 26 L.) ἕτερα μὲν οὖν πρὸς ἐτέρων καὶ ἄλλα δι' ἄλλων ἐστὶ τὰ τε διόντα τὰ τ' ἐξαγγέλλοντα, ὥστε οὐ θωμάσιον αὐτῶν τὰς τ' ἀπι-

στίας χρονωτέρας γίνεσθαι τὰς τ' ἐγχειρήσας βραχυτέρας, οὕτω δι' ἁλλοτρίων ἐρμηνειῶν πρὸς τὴν θεραπεύουσαν σύνεσιν ἐρμηνευομένων.

So the text of Gomperz, *Die Apologie der Heilkunst*<sup>2</sup>, p. 58. Diels, *Hippokratische Forschungen*, IV (*Hermes*, 48), p. 402, n. 4, rightly approves Schwarz's emendation of βραδυτέρας for βραχυτέρας. Gomperz and Littré prefer τὰς τ' ἀπιστίας, the reading of certain inferior MSS., to that of AMR, τὰς τε πίστίας. It seems to me however, that the latter is clearly right; for our author means to say that, since the physiological actions of medicines and nutrients are very complicated, it is not surprising that the confirmation of the theories, on which this or that remedy is tentatively administered, should require time, and that in consequence the treatment should be slow. The reactions being complicated and the indications being indirect, with the possible need of eliminating this or that secondary effect from the consideration of the physician in attendance, delay is unavoidable.

#### ΠΕΡΙ ΤΥΓΩΝ ΧΡΗΣΙΟΣ

2 (6, 126 L.) οἶον καὶ τὰ ὕδατα, ψυκτέα, θερμαντέα, διὰ λεπτότητα.

Editors and translators have been able to make nothing of this passage. It is obviously corrupt, but I think we may with certainty establish the writer's meaning, even if we cannot restore his exact words. The Greeks, having no thermometers, which owe their origin to Galileo, possessed no objective means of measuring heat and cold, being confined to the temperature sense of the body. Consequently there were made many serious mistakes, which led to curious theories, such as those which deal with the question, why springs are cold in summer and warm in winter. One may still hear among the uneducated or the half-educated things confidently asserted which science does not admit. Thus a poultry-man assured me that one must not give the hens warm water in cold weather, because it will immediately freeze. A maid-servant refused to scrub the veranda with warm water for the same reason, and a plumber assured me that if hot and cold water pipes are equally exposed and either freezes, it is always the former rather than the latter. The Greek equivalents are to be found in Arist. *Meteor.*, A 12, 348<sup>b</sup> 30 sq. and Plut., *Quaest. Conv.*, 6, 4, 690 B sq., where we are told that if water

or wine is to be cooled, it is advisable first to heat it. Many meteorological phenomena are explained by the ancient philosophers on this principle, to which I devoted some remarks in my review of Döring's *Geschichte der griechischen Philosophie*, *Philos. Review*, XIV (1905), p. 69 sq. I am confident that our author here refers to this principle, and that he gave also its counterpart, to wit, that if you wish to heat water, it should first be chilled. Possibly he may have written οἶον καὶ τὰ ὕδατα <τὰ> ψυκτέα <διὰ πυκνότητα θερμαίνουσι καὶ ψύχουσι τὰ> θερμαντέα διὰ λεπτότητα.

## ΠΕΡΙ ΝΟΤΣΩΝ Α

3 (6, 142 L.) ἀνάγκη δὲ τὰ τοιάδε ἔχει γίνεσθαι, ὅταν γίνηται.

So far as I know, all editors retain this text, except that Ermerins introduces ὥστε before γίνεσθαι. This addition is probably right, as the following passages will show; but they also show that we should read not ἀνάγκη, but ἀνάγκην. Cp. c. 1 (6, 140 L.) ἔπειτα δέ, ὁκόσα ἀνάγκας ἔχει τῶν νοσημάτων, ὥστε, ὅταν γένηται, εἶναι ἢ μακρὰ ἢ βραχέα ἢ θανάσιμα κτλ. c. 3 (6, 144 L.) τῶν δὲ νοσημάτων τὰ τοιάδε ἔχει ἀνάγκας, ὥστε ὑπ' αὐτῶν ἀπόλλυσθαι, ὅταν γένωνται. c. 8 (6, 156 L.) σχεδὸν δὲ ὅσα ἀνάγκας ἔχει, ὥστε γίνεσθαι ἐν τοῖσι νοσήμασι καὶ τρώμασι κακὰ ἐπὶ κακοῖσι, τὸν ἰητρὸν αἰτιῶνται τούτων γινομένων, καὶ τὴν ἀνάγκην τὴν τὰ τοιαῦτα ἀναγκάζουσιν γίνεσθαι οὐ γινώσκουσιν. Περὶ παθῶν, 37 (6, 246 L.) καὶ τοῦτο εἶδέναι, ὅτι ἀνάγκην ἔχει, ὥστε ὑπὸ τούτων τοῦ ἑτέρου ἢ ἀμφοτέρων γίνεσθαι.

20 (6, 178 L.) ἦν δὲ διαθερμανθῇ τε μᾶλλον ἢ σὰρξ καὶ εἰρύση πλέον τὸ ὑγρὸν, ὀδύνην παρέχει, καὶ ὅπη ἂν τοῦ σώματος ἀπ' αὐτῆς ὀρμήση καὶ καταστηρίξη, ὀδύνην παρέχει ὀξέην, καὶ δοκέουσιν ἔνιοι αὐτοῖσι τὸ ῥῆγμα μεθεστάναι. *Ibid.* καὶ ὁκόταν μυχθῇ τὸ τε αἷμα καὶ τὸ ὑγρὸν τὸ ἀπὸ τῆς σαρκός, παχύνεται τὸ αἷμα πολλαπλασίως αὐτὸ ἑωυτοῦ ταύτη, ἢ ἂν ἡ φλέψ τυγχάνῃ ἐσπασμένη, καὶ νοσωδέστερον γίνεται καὶ στασιμώτερόν τε καὶ πλέον· καὶ ὁκόταν πλέον γένηται, μετανέστη τὸ πλήρωμα, ἢ ἂν τύχῃ, καὶ ὀδύνην παρέχει ὀξέην, ὥστε ἐνίοισι δοκεῖν τὸ ῥῆγμα ἑωυτοῖσι μεθεστάναι.

In the first of these passages Θ alone has ἑωυτοῖσι for αὐτοῖσι of the other MSS.; in the latter all agree on ἑωυτοῖσι. In view of the proven



superiority of  $\Theta$  it might seem simplest and almost certain that its reading should be adopted in both instances. But is it, after all, so certain that either reading is correct? In view of the insistence in the text upon the fact of a change in the internal condition, it hardly seems necessary to insist that some persons think that the lesion has changed its position; besides, there is much emphasis in both passages upon the precise locality at which the humor collects. I suspect that our author wrote  $\alpha\upsilon\tau\acute{o}\sigma\epsilon$  in both passages, which became corrupted into  $\alpha\upsilon\tau\omicron\iota\sigma\iota$ , and then by systematic corrections for dialectical purposes was changed to  $\acute{\epsilon}\omega\tau\omicron\iota\sigma\iota$ . If this be true, it is of importance in estimating the Ionic color of our MSS., notably of  $\Theta$ .

#### ΠΕΡΙ ΠΑΘΩΝ

47 (6, 254 L.) τῶν σιτίων ἃ δύναμιν ἕκαστα ἔχει, τεκμαίρεσθαι χρῆ ἀπὸ τῶν φανερῇ τὴν δύναμιν ἐχόντων.

It is obvious that  $\alpha$ , the reading of the MSS. retained by Littré, is impossible. Ermerins adopts the conjecture of Mack,  $\eta\upsilon$ . It is more probable that the correct reading is  $\langle\eta\upsilon\tau\iota\nu\rangle\alpha$ .

#### ΠΕΡΙ ΤΟΙΩΝ ΤΩΝ ΚΑΤΑ ΑΝΘΡΩΠΟΝ

9 (6, 292 L.)  $\rho\epsilon\acute{\iota}$  δὲ καὶ διὰ τὴν θερμότητα, ὅταν αἱ σάρκες ἀραιαὶ γινόμεναι διόδους ποιήσωσι καὶ τὸ ὑγρὸν θερμανθὲν λεπτότερον γένηται.  $\pi\acute{\alpha}\nu$  γὰρ τὸ ὑγρὸν θερμαινόμενον λεπτότερον γίνεται, καὶ  $\pi\acute{\alpha}\nu$  ἐς τὸ ὑπείκον  $\rho\epsilon\acute{\iota}$ . μάλιστα δ' ὅταν λίην ὑπερφλεγμῆνῃ, διὰ τὸδε  $\rho\epsilon\acute{\iota}$ . αἱ σάρκες λίην ἔμπλεαι γινόμεναι ὅ τι ἂν μὴ δύνωνται χωρεῖν,  $\rho\epsilon\acute{\iota}$  τὸ ὑγρὸν τὸ μὴ δυνάμενον χωρεῖσθαι,  $\rho\epsilon\acute{\iota}$  δὲ  $\tilde{\eta}$  ἂν τύχῃ. ἐπὴν δὲ ἅπαξ εὐροοὶ αἱ ῥοαὶ γένωνται,  $\rho\epsilon\acute{\iota}$  ἐς τὸ χωρίον  $\tilde{\eta}$  ἂν τύχῃ, ἔστ' ἂν συμπιεχθῶσιν αἱ διόδοι τοῦ ῥοοῦ δι' ἰσχύνητα, ὅταν τὸ σῶμα ξηρανθῇ. ὥστε γὰρ τὸ σῶμα κοινωνέον αὐτὸ ἑωυτῷ διαλαμβάνει καὶ ἄγει, καθ' ὅ τι ἂν ὑγρὸν ἐπιτύχῃ, ἐς ἑωυτὸ τὸ ξηρόν. ἄγειν δὲ οὐ χαλεπὸν αὐτὸ ἔστιν, ὥστε τοῦ σώματος κενοῦ τε καὶ οὐ συνοιδέοντος ὑπὸ ἰσχύνητος.

Ermerins has rightly transposed  $\pi\acute{\alpha}\nu$  ἐς τὸ ὑπείκον so as to read ἐς  $\pi\acute{\alpha}\nu$  τὸ ὑπείκον, and has supplied in the last clause  $\kappa\epsilon\nu\acute{o}\upsilon$  τε  $\langle\acute{\epsilon}\acute{o}\nu\tau\omicron\varsigma\rangle$ , both of which corrections I had independently made. He also omits, without MS. warrant, τὸ ὑγρὸν . . . χωρεῖσθαι (5 sq.). Instead of ἐς τὸ χωρίον (7) I think we should clearly read ἐς τι χωρίον, and we should

place a comma after διαλαμβάνει (9). The translators render καθ' ὅ τι 'wherever.' I should prefer to delete καθ' altogether, because ἐπιτύχη can hardly mean "en quelque lieu que ce soit" (Littré), and if we retain καθ', we expect τὸ σῶμα rather than τὸ ξηρόν as its subject. In fact, I believe that some scribe, who overlooked the change of construction, because of the long deferred subject, deliberately added καθ'. The same difficulty accounts in part for the corruption of ἄγει to ἀλγεῖ (A). I should omit the comma after ἄγει. Similarly I regard κοινωνέον as a deliberate "correction" for the true reading κενὸν ἐόν, due to a failure to understand διαλαμβάνει, which means to 'distribute,' not to 'separate,' and αὐτὸ ἐωντῶ is to be taken with the verb, not with the participle κενὸν ἐόν [κοινωνέον]. Once κοινωνέον was introduced it naturally suggested ἀλγεῖ for ἄγει, because it was taken to imply συμπίθεια. Littré was so far misled that he failed to see that τὸ ξηρόν was the subject of the last clause.

This passage sets forth with exceptional clearness the Hippocratic conception of ἔλξις, which is simple and finds application in the explanation of innumerable phenomena. Heat tends first to expand all on which it acts. When flesh expands it becomes rarefied (ἀραιαί) and empty channels (διόδους, κενῶ <έόντος>) appear in it, whereas liquids become subtile in the process of expansion, which forces them out of their proper vessels to follow the line of least resistance (ἐς πᾶν τὸ ὑπεῖκον). Such an abnormal overflow occurs chiefly when inflammation sets in. For inflammation produces two results, (a) by the increased temperature producing a violent expansion of the fluids of the body, and (b) by the attendant congestion closing the ordinary channels so that they cannot receive the overflow. But when once the flow is started it tends, on the familiar principle of "water on the table" (for which see below, p. 166 sq.), to continue and finds some casual cavity (δεῖ ἔς τι χωρίον ἢ ἄν τύχη) until, by the drainage thus afforded, the secondary effects of heat appear, to wit, the drying and emaciation of the flesh, in consequence of which the channels close and stop the flow. The body being once more drained and empty (κενὸν ἐόν), the dry attracts whatever fluid comes its way, and the body distributes the humors to its several parts (αὐτὸ ἐωντῶ διαλαμβάνει). This distribution is easy since, by reason of its emaciation, the body is empty and its congested condition has passed.

44 (6, 338 L.) ἡ δὲ ἱητρικὴ ὀλιγόκαιρος ἐστίν· καὶ ὅς τοῦτο ἐπίσταται, ἐκείνῳ καθέστηκε, καὶ ἐπίσταται τὰ εἶδεα καὶ τὰ μὴ εἶδεα, ἃ ἐστὶν ἐν ἱητρικῇ ὁ καιρὸς γινώσκει· ὅτι τὰ ὑποχωρητικά οὐχ ὑποχωρητικά γίνονται, καὶ τᾶλλα ὅτι ὑπεναντία ἐστί, καὶ τὰ ὑπεναντιώτατα ὑπεναντιώτατα. ὁ δὲ καιρὸς ὅδ' ἐστί· τὰ σιτία προσφέρειν, ὅσων μέλλει τὸ σῶμα προσφερόμενον τὸ πλῆθος κρατεῖν.

A has ὀλγοχρόνιος for ὀλιγόκαιρος, and is probably right. For ὅς we should probably write ὅστις. Ermerins omits καὶ ἐπίσταται, regarding it (in the form ἡ ἐπίσταται) as a gloss on καθέστηκε, and omits also, as a scholion, ὅτι τὰ ὑποχωρητικά . . . οὐχ ὑπεναντιώτατα. I had independently suggested both these omissions. For προσφερόμενον we should probably read προσφερομένων. Littré notes that A correct. gives ἡδέα both times for εἶδεα, which might suggest ἡθεα; but εἶδεα is probably right.

For εἶδος Littré *ad loc.* refers to *Περὶ τέχνης*, 2 (6, 4 L.), on which passage see Gomperz, *Die Apologie der Heilkunst*<sup>2</sup>, p. 98 sq., and Diels, *Hippokratische Forschungen IV (Hermes, 48)*, p. 388 sq. Diels, *ibid.*, p. 390, calls in question my statement regarding pre-Socratic definition (*Περὶ Φύσεως*, p. 116, n. 146). What he says deserves attention and I admit that my statement was premature. I have in preparation a study of the subject which shall be as nearly as possible exhaustive, and prefer to await the results of it before saying anything more on the subject, which is immensely complicated by the problematical dates of certain Hippocratic treatises. Here the εἶδεα refer to classes, especially of foods and drugs, which bear a common name; and they are called μὴ εἶδεα because, as in *Περὶ τροφῆς*, 21 (9, 104 sq. L.), they either do not deserve the common name or actually go under a different name, and hence have conventionally a different εἶδος. In all cases, as in *Περὶ τροφῆς*, the final test lies in their ἔργον. See my remarks in *On Certain Fragments of the Pre-Socratics: Critical Notes and Elucidations (Proceedings of the American Academy of Arts and Sciences, XLVIII, No. 19)*, p. 702 sq. For τὰ εἶδεα καὶ τὰ μὴ εἶδεα see *Περὶ τόπων τῶν κατὰ ἄνθρωπον*, 46 (6, 342 L.) οὐδὲν μᾶλλον τὰ φάρμακα ἢ τὰ μὴ φάρμακα.

Scholars appear to have paid little attention to the interesting development of the term καιρὸς in the medical writers. The principle that all treatment must be individual led naturally to the further

refinement that it must be directed to the momentary condition of the individual and that the physician must seize the favorable moment (*καιρός*). Obviously the frequent use of the term *καιρός* in different connections tended to charge it with a wealth of meaning which it did not originally possess. Here we find a quasi-definition of *καιρός* as the knowledge of what will or will not under given conditions produce the desired physiological reaction: *καὶ ὅστις τοῦτο ἐπίσταται, ἐκείνῳ καθέστηκε τὰ εἶδεα καὶ τὰ μὴ εἶδεα, ἃ ἐστὶν ἐν ἡτρικῇ ὁ καιρός γινῶναι*. Clearly *καιρός* is here a very highly specialized technical term.

*Ibid.* ἐπὴν δὲ τὸν καιρὸν ὑπερβάλλῃ, τὸ ὑπεναντίον γίνεται, καὶ οἱ πρὶν ὑπερπέσσειν οἴονται ἔχειν, καὶ τὸ θερμαίνεσθαι.

The text is in desperate condition. No suggestion has yet been made to solve the puzzle. Littré vainly tries to defend and explain the text as given above. Ermerins, whom Fuchs follows, would omit *καὶ οἱ . . . θερμαίνεσθαι*; but Ermerins is far too free in making excisions especially where, as here, there is no sufficient ground for believing that scholia have intruded. It is better to assume a lacuna after *ὑπερπέσσειν* and to read something like *καὶ οἱ πρὶν ὑπερπέσσειν <μεμαθηκότες . . .> οἴονται ἔχειν, καὶ τὸ θερμαίνεσθαι*.

45 (6, 340 L.) τὰ ὑποχωρητικὰ τοιάδε ἐστίν, ὅσα ὀλισθηρὰ καὶ τμηματώδεα, καὶ ὅσα ἐν τοῖσι θερμοῖσι λεπτύνονται. ἡ γὰρ κοιλίη θερμὴ ἐστὶ· καὶ τἄλλα τὰ ἀλμυρὰ καὶ ὅσα τῶν τοιούτων πλείστον ἔχουσιν. τὰ δ' οὐ χωρητικὰ ἀλλὰ στάσιμα, ὅσα φύσαν παρέχουσιν· τὰ γὰρ ὑγρὰ ξηραίνόμενα φύσαν ποίεουσι, καὶ τὰ στύφοντα καὶ τὰ ὑπὸ θερμοῦ πηγνύμενα, καὶ τὰ ψαθυρὰ καὶ τὰ ξηρά. πάντα δὲ τὰ ἐντὸς φλεγμαίνειν ποίεουσι προσφερόμενα, ἅσσα τὰ ἐκτὸς ἰσχυαίνουσιν· ταῦτα δὲ καὶ ἰσχυτήριά ἐστι καὶ φλεγματώδεα. καὶ τὰ ὑποχωρητικὰ ἰσχυαίνοντα θερμαίνουσιν τὰ τοιαῦτα· ἔτι δὲ τὰ ὀξέα καὶ φλεγματώδεα. πάντα δὲ τὰ ψύχοντα τὰ ἐν τῇ κοιλίῃ· τὰ δὲ τοιαῦτα ὑποχωρητικὰ ἐστὶ· καὶ τὰ ψυχρὰ καὶ τὰ ὑγρὰ· ὅποταν δὲ μὴ ὑποχωρητικὰ ἦωσι, θερμαίνουσιν.

I will not speak of minor matters here; for Ermerins has in part anticipated me. But the classification of τὰ ἀλμυρὰ as cathartic and of τὰ ὑγρὰ as constipating seems to me to call for remark. In the first place, at the close of the passage τὰ ψυχρὰ καὶ τὰ ὑγρὰ are classed as diachoretic, as one should expect; then in the early portion of the clas-

sification we find ὅσα ἐν τοῖσι θερμοῖσι λεπτόνονται listed as cathartic. It would seem to be certain from general considerations that this referred to liquids, quite apart from the express statement c. 9 (6, 292 L.) *πᾶν γὰρ τὸ ὑγρὸν θερμαινόμενον λεπτότερον γίνεται*. In view of these facts I had concluded that some one had willfully transposed ἀλμυρά and ὑγρά in our text. But further investigation shows that we are rather confronted with a curious document of early Greek medicine. Evidently the question (naturally raised by the culinary and religious uses of salt as a purifying and preserving agent), whether salt was really diachoretic, was much discussed. Our passage seems to present a compromise answer. It would require too much space to discuss the texts at length, which would be necessary to a real consideration of the question. Instead of doing so, I will refer to other passages which relate to the subject. Hippocr. *Περὶ διαίτης*, B 48 (6, 550 L.) οἱ τάριχοι ξηραίνουσι καὶ ἰσχυραίνουσιν. *Περὶ παθῶν*, 59 (6, 268 L.) τὰ διαχωρητικά ἐν τῇ κοιλίῃ θερμαίνεται ταχύ, καὶ θερμαίνόμενα μαραίνεται καὶ τήκεται, καὶ τὴν διαχώρησιν διὰ τοῦτο ταχείην παρέχει· ὅσα δὲ στάσιμα τῶν σιτίων καὶ θερμαίνεται βραδέως, καὶ θερμαίνόμενα ξηραίνεται καὶ ξυνίσταται, καὶ διὰ τοῦτο περίσκληρα γινόμενα οὐ διαχωρεῖ. τὰ διαχωρητικά ἔγχυλά ἐστι καὶ φύσει θερμά, τὰ δὲ οὐρητικά ξηρὰ καὶ ψυχρά. Pliny, *H. N.*, XXXI, 45, gives after Dioscurides a characterization of the physiological action of salt, which is sufficiently complicated and embodies the compromise above noted. Galen, XIII, 501 K. says πρὸς γὰρ αὐ τοῖς ἄλλοις καὶ τοῦτο τοῖς ἀλσὶν ἐξαίρετον ὑπάρχει, τὸ στύφειν μᾶλλον ἢ ῥύπτειν. Oribasius, II, p. 712 sq. and V, p. 600 sq., presents the traditional compromise. Paul of Aegina, Bk. VII, 3, says that salts have desiccant and astringent powers. In view of this showing I prefer to leave the text as it stands, although it appears to be self-contradictory.

46 (6, 342 L.) *ιητρικὴ δὴ μοι δοκεῖ ἤδη ἀνευρῆσθαι ὅλη, ἥτις οὕτως ἔχει, ἥτις διδάσκει ἕκαστα καὶ τὰ ἔθρα καὶ τοὺς καιροὺς. ὅς γὰρ οὕτως ιητρικὴν ἐπίσταται, ἐλάχιστα τὴν τύχην ἐπιμένει, ἀλλὰ καὶ ἄνευ τύχης καὶ ξὺν τύχῃ εὐποιεθεῖν ἂν*.

Our MSS. here give *ἔθρα*, which is impossible. In my *Περὶ Φύσεως*, p. 117, I translated it "characters" and meant in n. 152 *ibid.* to suggest *ἔθρα* but somehow omitted to do so. Ermerins reads *εἶδεα*. This

would, of course, be admissible, but the frequent confusion of *ἔθος* and *ἥθος* makes it more probable that we should read *ἥθεα*. The important function of the physician, according to the 'old medicine,' was to discover and address himself to the individual *φύσις* and the precise juncture of circumstances, which constitutes the *καιρός*. The *φύσις* is also called the *ἥθος*, especially when it refers to the total individuality; since, however, in practice the individuals were grouped in classes, *εἶδος* likewise occurs. See *Περὶ ἀέρων ὑδάτων τόπων passim*, and cp. *Προρρητικὸν* B 3 (9, 12 L.) ἀλλ' ὅμως πρόσθεν ἢ τὰ ἥθεα τῶν νοσημάτων τε καὶ τῶν ἀλγεόντων ἐκμάθη ὁ ἱητρός, οὐ χρὴ προλέγειν οὐδέν. (For the text of this latter passage see below, p. 187.) For *εἶδεα* see *ibid.*, c. 11 (9, 30 L.).

I cannot believe that *εὐποιηθείη*, which Ermerins also retains, is correct; nor would it help us to write *εὖ ποιηθείη*. Perhaps our author wrote *εὐποροίη* ἄν or *εὐποιος* εἴη ἄν.

*Ibid.* ὅστις δὲ τὴν τύχην ἐξ ἱητρικῆς ἢ ἐξ ἄλλου τινὸς ἐξελάσει, φάμενος κτλ.

Cp. Plato, *Meno*, 96 C.

#### ΠΕΡΙ ΙΠΗΣ ΝΟΤΣΟΤ

18 (6, 394 L.) ἕτερον γὰρ ἐτέρῳ τροφή ἐστι, τῷ δὲ κάκωσις.

Here Θ has *τότε*. Wilamowitz has shown the superiority of Θ, especially in this treatise. We should clearly write *τοτὲ δὲ κάκωσις*, which brings the passage into line with the doctrine of *καιρός*.

#### ΠΕΡΙ ΕΛΚΩΝ

2 (6, 404 L.) τὸ δὲ ξύμπαν εἰπεῖν, ἐλαίῳ τὴν χρῆσιν ποιέεσθαι.

The MSS. are divided between *χρῆσιν* and *χρίσιν*, with the preponderance of authority in favor of the former. Ermerins adopts the latter reading, which is more appropriate; I suspect, however, that our author wrote *ἦσιν*. Cp. *Περὶ τῶν ἐν κεφαλῇ τραμάτων*, 13 (3, 228 L.) οὐδὲ καταπλάσσειν οὐδὲ μοτῶ τὴν ἦσιν ποιέεσθαι.

## ΠΕΡΙ ΔΙΑΙΤΗΣ Α

Carl Fredrich, *Hippokratische Untersuchungen*, Berlin, 1899, devoted ch. VI, of his excellent book to Περὶ διαίτης. He gives especial attention to A, cc. 3-25 and 35, of which he offers an improved text and an analysis, which has been much praised. Indeed, his study possesses undoubted merits, which I have no desire to minimize, but it has glaring defects also, which ought not to be perpetuated. Fredrich, addicted to the excesses of Quellenforschung, was interested chiefly in dissecting the treatise with a view to discovering the sources of its several constituents. In the excitement of the chase he at times quite failed to catch the essential thought of the author. He distinguishes three strata: (a) the physiological and dietetic doctrine of the medical compiler, (b) the opinions of an unidentified physiologist ("Physiker"), and (c) certain sayings derived more or less directly from Heraclitus. These strata are in his opinion so clearly distinguishable that they can be sharply contrasted and printed in different type. After this has been done throughout, Fredrich himself, p. 109 sq., admonishes us that we are not to accept too literally the results which he has obtained by his elaborate study. This is in the manner of anti-climax and has the appearance of an afterthought suggested by a critical scholar (perhaps von Wilamowitz?), who had read the discussion in manuscript. The difficulty with this search for definite sources, as with many another of its kind, is that we know far too little of the history of fifth century scientific thought. We know a few names, chiefly of "philosophers," and possess, aside from the enigmatic *Corpus Hippocrateum*, a few fragments only of the scientific literature of the period. Galen, who utters a noteworthy warning against this sort of Quellenforschung (XV, 22 sq., 67 sq. K.), reminds us (and though we know the fact, we cannot be too often reminded of it) that we owe our doxographic record chiefly to the Peripatetics, whose interest was primarily centered on the "philosophers" and on philosophical, that is to say, metaphysical, opinions. This fact has naturally led to false inferences from the character of our tradition. The relative importance of philosophers and philosophy has undoubtedly been overestimated, and it is generally assumed that a few "philosophers" originated all the ideas current in the extraordinarily

fertile period of the sixth and fifth centuries B.C. Then, when we have discovered a certain resemblance between the opinions, say, of a medical writer and of a "philosopher," we are sure of our source. How widespread this prejudice is among leading scholars might be shown by almost innumerable examples. Take a single illustration. Certain doctrines are credibly ascribed to Pythagoras, — that is, the Pythagoreans, — Alcmaeon, Empedocles, etc.<sup>1</sup> Aristotle was not prepared to say whether the Pythagoreans borrowed from Alcmaeon, or he from them. Our later tradition regards Alcmaeon as a Pythagorean. At all events he is a "philosopher," if for no other reason, because Aristotle deigned to allude to his opinions. Others go so far as to attribute the doctrines to Empedocles, although they do not dispute the authority of those who ascribe them to Alcmaeon. We do not even know what was the difference between a φιλόσοφος and a σοφιστής, unless we adopt the distinction of Plato, which can be applied to early representatives of the two classes only *cum grano salis*, if at all. We are forbidden by high authority to use the term λατροσοφιστής, because it is late; but we are constantly confronted with the problem, whether the writer of a given Hippocratic treatise was a physician or a Sophist. Where are we to draw the line of distinction? A leading authority has quite recently spoken of the science of Hippocrates, as if we knew *à priori* what a scientist of the fifth century was and how he regarded his function! It is not too much to say that as yet we know none of these things: hardly has a fair beginning been made of a comprehensive inquiry into the ideals and the state of science in the fifth century. Until we shall know much more than we do at present, the attempts to make sharp distinctions and to discover the precise origin and source of concepts must be regarded with grave suspicion. Fredrich, p. 110, says, "Er (the author of *Περὶ διαίτης*)

<sup>1</sup> Thus Fredrich speaks (p. 140) of the author of *Περὶ διαίτης* as using "Empedocles's theory of pores," although he is aware that the theory was known to Alcmaeon. A similar case may be found in Gilbert, *Die meteorologischen Theorien des griechischen Altertums*, p. 350, where he says of the Hippocratics: "theoretisch ist es die Empedokleische Gleichheit aller Grundstoffe, von dem die Verfasser der verschiedenen Schriften ausgehen." P. 352, n. 2, he refers to Alcmaeon: "die Voraufstellung der vier Grundqualitäten zeigt, dass Alkmaion der herrschenden Lehre sich anschloss." This "prevailing doctrine," if it existed before Alcmaeon, can have come only from the medical tradition, which must have been far older than Empedocles!



ist in gewissem Sinne selbst der Physiker." So much for distinctions (a) and (b). What shall we say of (c), the Heraclitean element? It is not necessary, nor is it desirable, here to discuss the extent or the character of our author's borrowing from Heraclitus. That he was largely indebted to the latter is beyond question. Here for once we have in the thoroughly individualized style a clue which cannot lead us altogether astray. But even here Fredrich and others have been at fault. Heraclitus is regarded from a false point of view, which has led Fredrich into the error of attempting to distinguish sharply between him and his physiologer. What, then, was Heraclitus himself? The several threads of the fabric are inextricably interwoven in the texture of *Περὶ διαίτης*, particularly in the earlier chapters. A careful study will show this. Take a single illustration. In c. 9, which according to Fredrich belongs to his "Physiker," *ζωπυρεῖται* clearly anticipates the illustration of the coals of fire in c. 29, which according to Fredrich (p. 108) is an addition of the compiler of *Περὶ διαίτης*, but was derived from Heraclitus (p. 149).

This fruitless attempt to determine the stratification of original sources has obscured the real course of thought, which Weygoldt had in part clearly perceived. Thus Fredrich, pp. 109, 139 sq., makes much of the "opposition" of the author of *Περὶ διαίτης* to the views of the physiologer in cc. 35-36. Now there is in fact a certain difference of point of view to be seen there; but, if I am not mistaken, it is not one which implies different authors. The author is merely speaking in two capacities. First, as "chemist" (if I may use the term), he speaks of the chemical 'elements' fire and water; then, as physiologist and dietetist, he deals with physiological elements or ultima. The same contrast occurs also in the statements about the composition of the *ψυχή* in cc. 6, 7, 25, etc. A physiologist, who was also a physiological chemist, might have the same difficulty in setting forth his views to-day; for it would be easy to lapse from one plane to another in the course of an exposition of his views. Fortunately there is less confidence shown by scholars and scientists to-day in the effort to give ultimate explanations of phenomena, and proximate principles are more to the taste of physiologists than chemical elements, because the former can be more directly observed and yield more significant data for further study.

2 (6, 468 L.) φημί δὴ δεῖν τὸν μέλλοντα ὁρθῶς συγγράφειν περὶ διαίτης ἀνθρωπίνης πρῶτον μὲν παντὸς φύσιν ἀνθρώπου γινῶναι καὶ διαγινῶναι, γινῶναι μὲν ἀπὸ τίνων συνέστηκεν ἐξ ἀρχῆς, διαγινῶναι δὲ ὑπὸ τίνων μερῶν κεκράτῃται· εἶτε γὰρ τὴν ἐξ ἀρχῆς σύστασιν μὴ γινώσεται, ἀδύνατος ἔσται τὰ ὑπ' ἐκείνων γινόμενα γινῶναι, εἶτε μὴ γινώσεται τὸ ἐπικρατέον ἐν τῷ σώματι, οὐχ ἱκανὸς ἔσται τὰ συμφέροντα προσενεγκεῖν τῷ ἀνθρώπῳ.

I give the improved text according to Diels, *Hippokratische Forschungen I* (*Hermes*, 45), p. 140. The only question I desire to raise concerns the reading of γινώσεται in the clause εἶτε μὴ γινώσεται τὸ ἐπικρατέον. Diels gives the text of Θ, apparently confirmed by P ("si nesciat"), though in such matters its support counts for little. Apparently, M here has ἐπιγινώσεται, though Diels gives this as referring to the preceding γινώσεται, which I infer from Diels' note (ἀδύνατος... γινώσεται Θ P: fehlt M) is wanting in M. What we naturally expect is διαγινώσεται, as I suggested in my *Περὶ Φύσεως*, p. 125, n. 174. The fact, if it be a fact, that M has a variant, though a false one, may possibly favor the change. If we adopt διαγινώσεται, the passage affords a particularly striking illustration of the stylistic arts of our author noted by Diels, *ibid.*, p. 135 sq.

7 (6, 480 L.) περὶ μὲν οὖν τῶν ἄλλων ζώων ἐάσω, περὶ δὲ ἀνθρώπου δηλώσω. ἐσέρπει γὰρ ἐς ἀνθρωπον ψυχὴ πυρὸς καὶ ὕδατος σύγκρησιν ἔχουσα, μοῖραν δὲ σώματος ἀνθρώπου. (ταῦτα δὲ καὶ θήλεα καὶ ἄρσενα πολλὰ καὶ παντοῖα τρέφεται τε καὶ αὐξεται διαίτη τῇ περ ἀνθρώπου.) ἀνάγκη δὲ τὰ μέρεα ἔχειν πάντα τὰ ἐσιόντα· οὐτινος γὰρ μὴ ἐνείη μοῖρα ἐξ ἀρχῆς, οὐκ ἂν αὐξηθείη οὔτε πολλῆς τροφῆς ἐπιούσης οὔτε ὀλίγης.

Again I give the text of Diels, *Vorsokr.* <sup>3</sup>, I, p. 106. In the second sentence Diels formerly adopted Bernays' μοῖρας for the μοῖραν of the MSS. I believe neither reading is right, but we should adopt μέρεα (as proposed by Fredrich), which occurs in the parallels in cc. 6 and 25. Doubtless μοῖραν is due to μοῖρα below, οὐτινος γὰρ μὴ ἐνείη μοῖρα, where however, as in cc. 5, 9, etc., our author uses it in the appropriate sense of "allotted portion," which it does not bear here. Besides, the following ταῦτα presupposes a neuter plural such as μέρεα or μόρια, as we find τὰ μόρια τὰ ἐωυτῆς in c. 6. The parallels cited point, however, to μέρεα.

In the first sentence Fredrich finds striking proof of the scissors and

paste-pot. The compiler has cut up the treatise of a physiologer in which there was an extensive discussion of the other animal forms, and has discarded it after a phrase, mechanically supplying a formula of transition. We should all be thankful to him if he could prove the existence of such a zoölogical treatise. In the fragments of the philosophers we are confronted with the same phenomenon that we meet here. If we may judge from the doxographic record, Anaximander gave a very general sketch of the origin of animal life and then passed on to a somewhat detailed account of the beginnings of man, in whom his interest centered. The same is true, proportionately, of the other pre-Socratics. Among the medical fraternity we hear of the dissection of animals, but always with a view to throwing light on human physiology. Everywhere we meet the common assumption that inferences from animal to human physiology are valid, even when more advanced knowledge has shown that here and there they were led into error. The Greeks were frankly anthropocentric in their philosophy and science. That a physician should be so can hardly call for apology. Veterinary surgery arose late, from all that we can learn. The only classification of animal life (except that which is embodied in the popular language of the Greeks), which may be assumed to antedate Plato, is, if I mistake not, that which occurs in the second book of *Περὶ διαίτης* in a classification of food-stuffs. If Fredrich or some other scholar can trace scientific study of zoölogy, not in the interest of human physiology and dietetics, farther back, he will render science a service. The writer of *Περὶ σαρκῶν* gives an equally clear indication of this point of view. See my discussion of c. 1 below, p. 179. The beginning of *Περὶ παρθενίων* is likewise of the same sort. Other examples, as from *Περὶ τέχνης* and from *Περὶ ἀέρων ὑδάτων τόπων*, could easily be adduced. One and all point to the same conclusion: to wit, that scientists were fond of linking their special inquiries with a more comprehensive view of the world. In most cases it is quite impossible to determine from whom they got this comprehensive view. We must always remember that speculation was, so to speak, in the air, and that men of active intelligence made their own syntheses, as men do now. As I have remarked before, Fredrich's method is too mechanical and offends both by ignoring the intellectual *milieu* and by attributing too scant intelligence to his man-of-straw, "the compiler."

But let us return to our passage. It will be noted that Diels places the sentence *ταῦτα δὲ . . . ἄνθρωπος* in parentheses. This he has done in all his editions except in *Herakleitos von Ephesos*.<sup>2</sup> In the first edition of that work he suggested that the sentence probably belonged to the close of c. 6. In my *Antecedents of Greek Corpuscular Theories*, p. 149, I offered the more reasonable suggestion that it was misplaced and belonged after *έάσω*. But neither was right; for the words belong where they stand, and there is no need of parentheses. In order to understand the section, cc. 6-31, it is necessary to note only that, with the exception of cc. 11-24, in which our author sought to embellish his work with general reflections derived more or less directly from a Heraclitean source, it is embryology with which the writer is concerned. This fact is somewhat obscured by our author's use of *ψυχή* for the vital principle. In c. 25 *ψυχή* is used in a sense which finds a close analogy in *Περὶ έβδομάδων*, 13 (Roscher, *Die hippokratische Schrift von der Siebenzahl*, p. 19), as Fredrich pointed out, p. 135. There however, something like a transmigration of *ψυχαί* is in our author's mind, disclosing the tenacity of the religious association of ideas. He had in mind, however, the connection also of *ψυχή* with *πνεῦμα*, the breath of life, which likewise recurs in *Περὶ έβδομάδων*, 13. It would lead us too far afield to discuss here the curious developments of the concept *ψυχή* in the fifth century, many phases of which appear in the Hippocratic writings. In cc. 6 and 7, however, our author speaks from a different point of view, which he may have connected with the others, though we do not know how he reconciled them. To put it briefly, he practically identified *ψυχή*, the life principle, with *σπέρμα*, accepting the doctrine of procreation universally held by the Hippocratics. He thus predicates of the *ψυχή* what others predicate of the *σπέρμα*. What this old view of procreation was, I set forth briefly in my *Antecedents of Greek Corpuscular Theories*, p. 170. Wilamowitz, *Die hippokratische Schrift Περὶ ίρῆς νοῦσου*, p. 15, n. 2, cites the agreement of *Περὶ άέρων υδάτων τόπων* with *Περὶ ίρῆς νοῦσου* on this point as evidence that the two treatises are the work of the same author. How inconclusive such an argument is will readily be seen if one compares the following passages where the point of view is fundamentally the same: *Περὶ άέρων υδάτων τόπων*, 14 (2, 60 L.); *Περὶ διαίτης* A, 27 (6, 500 L.), 30 (6, 504 sq. L.); *Περὶ γονῆς*, 1 (7, 470 L.), 3 (7, 474 L.), 8 (7, 480 L.);

Περὶ φύσιος παιδίου, 12 (7, 486 L.), 17 (7, 496 sq. L.); Περὶ νούσων Δ, 32 (7, 542 L.); Γυναικείων Α, 8 (8, 34 L.), 17 (8, 56 L.), 24 (8, 62 L.), 25 (8, 64 L.); Γυναικείων Β, 175 (8, 358 L.), where ἐξονειροῖ is used in speaking of a woman; Περὶ ὁστέων φύσιος, 15 (9, 188 L.). Other passages of like tenor I omit because I have cited them elsewhere. It is from this point of view that our author asserts in cc. 28 and 29 that there is a fusion of the parental ψυχαί in their offspring, although he is aware (c. 29) that his doctrine will hardly win acceptance. In c. 3 he has stated that fire and water are the elements of which all animals are composed; in c. 4, that these elements combine in varying proportions, which give rise to a great variety of organic forms and substances. These "proximate principles" are the "elements" with which the physiologist is immediately concerned. To them he applies the names ὅλα ὄλων, μέρεα μερέων, μέρεα σώματος ἀνθρώπου, to be sure, from the special point of view of embryology and procreation. He cannot of course entirely forget the result of his "chemical" analysis, and hence refers to ψυχή as having πυρὸς καὶ ὕδατος σύγκρησιν; yet it is the μέρεα σώματος ἀνθρώπου with which as a physiologist he is directly concerned in dealing with the problems of nutrition, growth, and procreation. These μέρεα σώματος ἀνθρώπου are ὅλα ὄλων as being derived from the entire bodies of the parents and reproducing them in miniature, and they contain in themselves the elements of sex, being male and female (cc. 7, 8, 27 sq.), though not because the parents are male and female respectively, but because each parent contributes elements of opposite sex value. These physiological elements are contributed by the parents in large quantity and in great variety. The processes of growth and nutrition, which apply also to the composition and growth of the embryo, depend, as in the philosophy of Anaxagoras, upon the accession of like to like, not of the 'chemical' elements as such, but of the physiological compounds or "proximate principles." I have no doubt, as I said in my *Antecedents of Greek Corpuscular Theories*, that Anaxagoras derived his point of view from the medical tradition, not *vice versa*. Since the principle of growth by the accession of like to like obtains in nutrition and growth, each "proximate principle" that is to grow and produce the body of the offspring must be present in the ψυχή (= σπέρμα). I think there can be no doubt of the correctness of this explanation.

7 (6, 480 L.) ἔσω δὲ βιαζόμενου, ἔξω ἔρπει.

Here M has βιαζόμενον, Θ βιαζόμενου. Littré and Ermerins follow the former; Diels, the latter. It seems certain that M is right; for (τὸ) βιαζόμενον is the subject to ἔξω ἔρπει.

8 (6, 480 L.) χρόνον δὲ τοσούτον ἕκαστον τὴν αὐτὴν τάξιν ἔχει, ἄχρι μηκέτι δέχεται ἢ χώρη μηδὲ τροφήν ἱκανὴν ἔχει ἐς τὸ μήκιστον τῶν δυνατῶν. ἔπειτεν ἀμείβει ἐς τὴν μέζονα χώρην, θήλεα καὶ ἄρσενα, τὸν αὐτὸν τρόπον ὑπὸ βίης καὶ ἀνάγκης διωκόμενα· ὁκότερα δ' ἂν πρότερον ἐκπλήσῃ τὴν πεπρωμένην μοῖραν, ταῦτα διακρίνεται πρῶτα, ἅμα δὲ καὶ συμμίσσεται.

Diels gives ἢ χώρη μηδὲ τροφήν after M; Θ shows ἢ τροφήν μηδὲ χώρην, which is undoubtedly wrong. I suspect that we should read ἄχρι μηκέτι δέχεται (sc. ἢ τάξις) ἢ χωρὴν μηδὲ τροφήν ἱκανὴν ἔχει, χωρεῖν being used impersonally as in Arist., *H. A.*, 10, 46, 626<sup>b</sup> 10 καὶ τοὺς κηφήνας δὲ ἀποκτείνουσιν (sc. αἱ μέλιτται), ὅταν μηκέτι χωρὴν αὐταῖς ἐργαζομένας. In that event ἢ χωρὴν may be a gloss on δέχεται.

It is more important, however, to grasp the meaning of the passage. It refers, I believe, to the causes which bring about the separation of the ψυχή (= σπέρμα), with its male and female constituents, from the bodies of the parents preparatory to procreation. This segregation occurs when, to use modern phraseology, the cells have attained their maximum development in the mature body, as our author more clearly states in c. 25. Want of room and want of the requisite nutrition for further growth causes them to migrate to a larger and more favorable place, — to wit, the womb (see c. 9). There is, however, another problem, arising from the fact that ψυχή (= σπέρμα) is extruded not once for all, but from time to time. This problem our author tries to solve by asserting that some "cells" attain their allotted measure of development (τὴν πεπρωμένην μοῖραν) earlier than others. Compare the description of the ἀκμή of the body as a whole, c. 25: ὁκόσα δὲ τῶν σωμάτων ἀκμάζοντά ἐστι καὶ ἐν τῇσι ἡλικίῃσι τῇσι γονίμῃσι, δύναται τρέφειν καὶ αὔξειν. Once the "cells" have attained their maximum growth in the parental body, they flow off and are fused in the act of conception. With c. 9. the attention of our author shifts from the parents to their offspring.

9 (6, 484 L.) τὸ δὲ πῦρ ἐκ τοῦ συμμιγέντος κινεόμενον τοῦ ὕγρου διακοσμεῖται τὸ σῶμα κατὰ φύσιν διὰ τοιήνδε ἀνάγκην.

This is the text of Diels, *Vorsokr.*<sup>3</sup>, I, p. 107. The MSS. have κινεομένου; κινεόμενον is due to Diels. In *Herakleitos von Ephesos*<sup>2</sup>, p. 61 sq., he translates: "Das Feuer jedoch, das sich von dem ihm beigemischten *Element*, dem Wasser, in Bewegung setzt, bildet, usw." This seems to me practically impossible. Ermerins, who retains the MS. reading, renders the sentence thus: "Ignis autem ex commixto humore comoto corpus secundum naturam propter hanc necessitatem componit." This is more nearly in accordance with the author's thought; for fire, as the active element, can hardly be said to be set in motion by water. In either case, however, the phraseology is awkward. I still regard as most probable the suggestion I made in *Class. Philol.* 5, 247 — to wit, to read τὸ δὲ πῦρ [ἐκ] τοῦ συμμιγέντος κινεομένου <ἐκ> τοῦ ὕγρου κτλ. "When the mixture (of fire and water: with τοῦ συμμιγέντος compare ἐν τῷ συνεστηκότι two lines above) is set in motion (by the active fire within it), the fire fashions the body out of the moist mass." This remedy is both simple and consonant with the following statements of our author. The process here described is essentially the same as that by which the author of *Περὶ σαρκῶν*, c. 3 sq., explains the formation of the various inner organs. Not very different is *Περὶ φύσιος παιδίου*, 12 (7, 486 sq. L.).

*Ibid.* πλεῖστον γὰρ τὸ ὕγρον ἐνταῦθ' ἐνῆν, ὅπη κοιλίη καλεῖται· καὶ ἐξέπεσεν ἐντεῖθεν, ἐπεὶ οὐκ εἶχε τροφήν, ἔξω, καὶ ἐποίησατο τοῦ πνεύματος διεξόδους καὶ τροφῆς ἐπαγωγὴν καὶ διάπεμψιν. τὸ δὲ ἀποκλεισθὲν ἐς <τὸ> ἄλλο σῶμα περιόδους ἐποίησατο τρισσάς· ὅπερ ἦν ὑγρότατον τοῦ πυρός.

It is quite impossible to restore to integrity this passage, in which there is doubtless considerable confusion and some loss. This remark applies especially to the close of c. 9, but likewise to the part here printed. The last clause ὅπερ ἦν ὑγρότατον τοῦ πυρός is certainly either corrupt or the result of a considerable lacuna. There is one point, however, where Diels has erred without necessity: he renders διάπεμψιν with "Zuleitungen." The word, as Fredrich, p. 100, and Ermerins have seen, refers to the other end of the alimentary canal. In the case of respiration the organs for intake and outlet are the same; in

the alimentary tract it is not so. Cp. *Περὶ σαρκῶν*, 3 (8, 586 L.) *κατὰ δὲ τὸν αὐτὸν λόγον καὶ ἡ φάρυγξ καὶ ὁ στόμαχος καὶ ἡ γαστήρ καὶ τὰ ἔντερα ἐς τὸν ἄρχον κοῖλα ἐγένοντο.*

16 (6, 490 L.) *ἀπὸ μιῆς ψυχῆς διαιρεομένης πλείους καὶ μείους καὶ μέζονες καὶ ἐλάσσονες.*

This sentence has created difficulties. Littré renders: "D'une seule âme partagée en viennent plusieurs et plus petites et plus grandes et moindres." One sees at a glance that this is impossible. Ermerins, "Ab uno animo in partes diviso plures et pauciores, maiores et minores fiunt," and Diels, in the same sense, "Von einer Seele, die sich mehr oder minder teilt, *bilden sich* grössere oder geringere *Seelen*." I regard these interpretations as erroneous. As we have seen, our author regards the *ψυχή* as an efflux from the entire *ψυχή* of each parent fused in conception. Hence there can hardly be a question of more or less division or of division in more or fewer parts. Nor can we suppose that the writer refers to successive emissions of *ψυχαί* from the parental *ψυχή*; for he has already touched upon that, and it would hardly have any bearing on his present problem. All the renderings above given rightly interpret *μέζονες καὶ ἐλάσσονες*; they err, I believe, in mistaking the sense of *πλείους καὶ μείους*, which I conceive to be identical in meaning with *μέζονες καὶ ἐλάσσονες*. That *πολύς* may have the sense of "large" is well known: *πλείστα* occurs in this sense, c. 25. Our author, I believe, is still speaking of procreation, and has in mind the problem of the likeness or unlikeness (in size) of offspring to parent.

28 (6, 502 L.) *ἦν μὲν οὖν ἐς ἄρσενα τὰ σώματα ἀποκριθέντα ἀμφοτέρων τύχη.*

Littré here introduces *ἐς* from Θ. It is clearly out of place. I had independently suggested the reading adopted by Ermerins *ἦν μὲν οὖν ἄρσενα τὰ [σώματα] ἀποκριθέντα <ἀπ'> ἀμφοτέρων τύχη*. The only question which seemed to me difficult to answer was whether we should retain *σώματα* in the sense of 'masses.' Θ here seems to be rather untrustworthy. Below, in the same chapter, we read *τὸ δὲ σῶμα τὸ μὲν ἄρσεν αὖξεται, τὸ δὲ θῆλυ μειοῦται καὶ διακρίνεται ἐς ἄλλην μοῖρην (μοῖραν Θ)*. Here again *σῶμα* is at least questionable, and I suspect that we



should read *χώρην* for *μοίρην*. If that be true, *Θ's μοίραν* would be another instance of the influence of the corrector for dialectic and orthographic purposes. At the close of c. 28 I assume a lacuna: *διὰ τὴν σύγκρησιν τοῦ ὕδατος <καὶ τοῦ πυρός> τῶν μερέων*.

29 (6, 504 L.) *τοῦτο καὶ ἀνθρωπίνη ψυχὴ πάσχει*.

In the preceding comparison of the fusing souls with live coals, I should follow the text of Fredrich, *Hippokratische Untersuchungen*, p. 149, n. 4; but we should clearly adopt Ermerins' *τῷτό τοῦτο* in the final sentence here given, and read <ή> *ἀνθρωπίνη ψυχή*.

33 (6, 512 L.) *ἀτρεμίζον δὲ τὸ σῶμα τῆς αὐξήσιος ἔψυκται*.

Ermerins reads *κατέψυκται*. He and Littré make *τῆς αὐξήσιος* depend on *ἀτρεμίζον*, which is somewhat forced. I should prefer to assume the loss of a participle, say, *ληξάσης*, before *αὐξήσιος*.

36 (6, 524 L.) *φύσιν γὰρ μεταπλάσαι ἀφανέα οὐχ οἶόν τε*.

Littré appears here to misconceive our author's meaning, as he frequently does when *φύσις* is involved. The *φύσις ἀφανής* is of course the *ψυχή*. Since we may not deal with it directly, we must, our author says, approach it indirectly, by changing the *πόροι* through which the *ψυχή* operates. There is, as was stated above, p. 154, a certain want of consistency here, in that certain characteristics of the *ψυχή* are derived from their elemental composition while others are explained as due to the physiological structure of the body. Fredrich regards this as proof positive that our author is a mere compiler. But close attention will disclose the same inconsistency in the physiology of Epicurus, and what is more significant, in the philosophy of Leucippus and Democritus. It is well known that these great philosophers (of whom, as philosophers, we must of course speak with the utmost respect) explained certain phenomena by direct reference to the shapes of the constituent atoms, while they accounted for the great mass of phenomena by a somewhat vague reference to the groupings and combinations of atoms without much regard to their several shapes. That our author here uses the voice as an illustration to elucidate the influence of the *πόροι* on the state of the *ψυχή* is due to the fact that the voice depends on the breath (*πνεῦμα*), with which our author, as does the author of *Περὶ ἐβδομάδων*, 13, intimately associ-

ates *ψυχή* (cp. c. 25). If any one is inclined to despise him because his *ψυχή* is associated now with *σπέρμα*, now with the *ἐμφυτον θερμόν*, now with *πνεῦμα*, let him reflect on the complexity of the concept *ψυχή* in the philosophies of Plato and Aristotle, and let him try to disassociate the complex group of concepts combined in the Stoic *νοῦς*.

## ΠΕΡΙ ΔΙΑΙΤΗΣ Γ

71 (6, 610 L.) *δοκίη γὰρ ἂν ἔλθῃ ἀπόκρισις καὶ ὅτου ἂν κρατήσῃ, τοῦτο ἐνόσησεν.*

The MSS. have *δοκίη* or *δοκία*. Θ has *ᾠκου* for *ὅτου* and *ἐνοσοποίησεν* for *ἐνόσησεν*. At both these latter points Θ is clearly right, as the parallel sentence, c. 73 (6, 612 L.) *ὅκη ἂν ῥαγῇ ἢ πλησμονή, τοῦτο διαφθείρει*, sufficiently proves. Ermerins took *ἐνόσησεν* as transitive and so thought to retain it. The variants *δοκίη* and *δοκία* are probably due to conflation of *ὅκη* and *ᾠκοι*. We should read *ὅκη γὰρ ἂν ἔλθῃ <ἢ> ἀπόκρισις καὶ ᾠκου ἂν κρατήσῃ, τοῦτο ἐνοσοποίησεν*.

## ΠΕΡΙ ΔΙΑΙΤΗΣ Δ

88 (6, 642 L.) *ὅταν δὲ πρὸς τὰς ἡμερινὰς πρήξιας ὑπεναντίωται τὰ ἐνύπνια καὶ ἐγγίγηται περὶ αὐτέων ἡ μάχη ἢ νίκη, τοῦτο σημαίνει παραχὴν ἐν τῷ σώματι. καὶ ἦν μὲν ἰσχυρὴ ἦ, ἰσχυρὸν τὸ κακόν, ἦν δὲ φαύλη, ἀσθενέστερον.*

Interest centers in *ἡ μάχη ἢ νίκη*, which is the reading of Θ, except that *νίκη* stands without accent. Littré defends this text, saying that *νίκη* answers to *ἰσχυρή*, *μάχη* to *φαύλη*. This conclusion is hard to accept, and Ermerins cut the knot by reading simply *μάχη* for *ἡ μάχη ἢ νίκη*. The readings of the other MSS. show various attempts to solve the puzzle, but make it plain that *νίκη* must somehow represent the true reading. There are two possibilities, between which it is difficult to decide: (a) our author may have written *ἡ μάχη ἢ νείκεα*, when *νείκη* came into the text by some careless scribe, and *νίκη* resulted by itacism: in this case *ἰσχυρά* (Θ) might be meant for a plural due to *νείκεα*; or (b) our author may have written *ἡ μάχη ἢ νείκη*, intending *νείκη* to be taken as feminine singular. Of the scant evidence for *νείκη*, fem., only Heath's *νείκης* (for MSS. *νίκης*), in Aesch., *Agam.*, 1378, accepted by many editors, and the mention of the form in E. M.

appear to be left; for the epigram in Paus., 5, 2, 5 is equivocal, and Diels reads Νίκης in Timon, fr. 21, 2, while most editors reject Hermann's νείκης (for MSS. νίκης) in Aesch., *Eum.*, 903. That one or the other form stood here seems to me certain; for we thus obtain the proper contrast, μάχη answering to ἰσχυρή, νείκεα (or νείκη) to φαύλη.

#### ΠΕΡΙ ΓΥΝΑΙΚΕΙΗΣ ΦΥΣΙΟΣ

1 (7, 312 L.) περὶ δὲ τῆς γυναικείης φύσιος καὶ νοσημάτων τάδε λέγω· μάλιστα μὲν τὸ θεῖον ἐν τοῖσιν ἀνθρώποισι αἴτιον εἶναι· ἔπειτα αἱ φύσεις τῶν γυναικῶν καὶ χροιαί.

Littré, 8, 527 sq., has discussed this remark at length, and has sought to connect it with the beginning of *Περὶ παρθενίων* (8, 466 L.) and thus to bring the doctrine into harmony with that of *Περὶ ἱρῆς νόσου* and *Περὶ ἀέρων ὑδάτων τόπων*. In all these matters he was, I believe, quite in the wrong. There is, I conceive, no relation between τὸ θεῖον, as here intended, and the cosmological principles referred to in *Περὶ παρθενίων*. Of that passage we shall have more to say in its place. That there should be different points of view represented in so composite a body of literature as the collection of ancient medical treatises handed down to us as the works of Hippocrates, is no longer a matter for wonderment. Littré himself probably did more than any one other scholar to make this a thing of common knowledge. Alongside the scant courtesy shown to the votaries of religion in *Περὶ ἱρῆς νόσου* we have the pious genuflexions of *Περὶ εὐσχημοσύνης*, 6 (9, 234 L.). So too *Προγνωστικόν*, 1 (2, 112 L.) runs directly counter to *Περὶ ἱρῆς νόσου*, 2 (6, 364 sq. L.). As for our passage from *Περὶ γυναικείης φύσιος*, the obvious meaning of the words is also that intended by the writer. He recognizes that divine agency brings about many, even the most important things. How they are brought about he does not pause to inquire,—at any rate, not to inform us. But for him, a man of science, science, which alone is his present concern, has nothing to do with these; therefore he passes abruptly on to matters which lie within its province. Possibly the author may have been of the number of those who, like Socrates, held that the limits of man's art and intelligence are closely drawn and sharply defined, and that the wise man will cultivate his garden and commit the rest to the gods. At

all events, one is reminded by his statement of certain expressions purporting to represent the Socratic turn of thought, such as Xen., *Mem.*, 1, 3, 5, Διαιτη δὲ τὴν τε ψυχὴν ἐπαίδευσε καὶ τὸ σῶμα, ἢ χρώμενος ἂν τις, εἰ μὴ τι δαιμόνιον εἴη, θαρραλέως καὶ ἀσφαλῶς διάγοι, and *Equit.*, 11, 13. There is also a passage in *Προρρητικὸν* B, 8 (9, 26 L.) which seems at least to hint that beyond the range of man's art — though of course the writer is concerned solely with that — there lies the possibility of divine intervention: περὶ δὲ ποδαγρώντων τάδε· ὅσοι μὲν γέροντες ἢ περὶ τοῖσιν ἄρθροισιν ἐπιπωρώματα ἔχουσιν, ἢ τρόπον ταλαιπωρον ζῶσι, κοιλίας ξηρὰς ἔχοντες, οὗτοι μὲν πάντες ἀδύνατοι ὑγιᾶς γίνεσθαι ἀνθρωπίνῃ τέχνῃ, ὅσον ἐγὼ οἶδα· . . . ὅστις δὲ νέος ἐστὶ καὶ ἀμφὶ τοῖσιν ἄρθροισιν οὐπω ἐπιπωρώματα ἔχει, . . . οὗτος δὲ ἰητροῦ γνώμην ἔχοντας ἐπιτυχὼν ὑγιᾶς ἂν γένοιτο. I may add that Littré, besides being at fault in his apprehension of our passage, was mistaken also in his interpretation of *Περὶ ἰρῆς νούσου*, 2 (6, 364 L.) φύσιν δὲ τοῦτο καὶ πρόφασιν ἀπὸ ταύτου τὸ θεῖον γίνεσθαι ἀφ' ὅτου καὶ τᾶλλα πάντα. He failed to see — what is obvious from the context — that τοῦτο is to be taken with τὸ θεῖον, and that one must supply from the foregoing sentence ἔχει to govern φύσιν καὶ πρόφασιν, the infinitive γίνεσθαι depending on φύσιν<ἔχει>, as it might on πέφυκεν. Fuchs, though apparently somewhat uncertain about the syntax, correctly renders the thought.

2 (7, 314 L.) καὶ ἐνίοις προσθετοῖς χρήσθω.

Here, apparently, all the MSS. show ἐνίοις. The author is, however, prescribing the treatment in every detail, and nowhere else does he use so general terms. In fact, general rather than specific directions are extremely rare in the *Corpus*. I have noted but three other instances — all in *Περὶ ὄψιος* — which may be worthy of remark: c. 4 (9, 156 L.), where Sichel reads τότε δὲ χρή τινι τῶν ὑγρῶν φαρμάκων, ὅταν δὲ τὸ αἷμα ἀπορρυῇ, χρή διαχρίειν τῷ ἐναίμῳ (Ermerins introduces his own conjecture ἐναίμῳ τινὶ) φαρμάκῳ. c. 9 (9, 160 L.) ρεύματος δὲ μὴ ἔχοντος, μετὰ γέ του (τοῦ Ermerins) ξηροῦ τὴν ὑπάλειψιν ξυμφέρει ποιεσθαι. Even these exceptional instances of rather general directions are somewhat uncertain. Possibly this fact had its influence with Ermerins, who in our passage simply omitted ἐνίοις ("Equidem ἐνίοις abiicio"). This accords with his practice of omitting almost anything which causes difficulty: an easy remedy, but one hardly

to be commended. In our treatise, and in the other gynecological treatises of the *Corpus*, woolen bandages and applications are prescribed on almost every page. I therefore suggest that we read *ἐρίους* or *είρίους* for *ένίους*. The two forms are so constantly confused in the MSS. that I prefer to leave the choice between *ἐρίους* and *είρίους* to others.

#### ΠΕΡΙ ΟΚΤΑΜΗΝΟΤ

12 (7, 458 L.) ἕκαστα γὰρ χωρίζεται ῥέποντα κατὰ τὰς συλλοχίας· κρατιστεύει δὲ τὰ τῷ ἡλίῳ ξυντροφώτατα.

The meaning of these words has, so far as I know, been missed by all the interpreters. It depends on that of *συλλοχίας* (an ἄπαξ *είρη- μένον*), and of *ξυντροφώτατα*. As a matter of fact, the sentence is somewhat uncalled for, and has no immediate connection with embryology, but was suggested by the reference to excrement at the close of the preceding sentence. When anything passes off from the body, in which it was combined with others in physiological compounds, it is resolved into its elements, which tend to reunite each with its own kind. This is the meaning of the first clause, and so it was obviously understood by the Schol. Galen.: *συλλοχίας, ἀθροίσματα· ἡ μεταφορὰ ἀπὸ τῶν εἰς τοὺς λόχους συνειλεγμένων*. The thought, a commonplace in the *Corpus*, I have abundantly illustrated in my essay *On Certain Fragments of the Pre-Socratics* (*Proceedings of the American Academy of Arts and Sciences*, vol. XLVIII), p. 726 sq. As to the last clause, the author means only that the warm element (fire) is the best. This also is a commonplace in early Greek thought, for which see Fredrich, *Hippokratische Untersuchungen*, p. 134 sq. Compare in particular Hipp., *Περὶ ἐβδομάδων*, cc. 6 and 15. Here *ξυντροφος* is practically equivalent to *συγγενής*.

#### ΠΕΡΙ ΦΤΥΣΙΟΣ ΠΑΙΔΙΟΥ

18 (7, 502 L.) ὥσπερ ὕδατι ἐπὶ τραπέζης.

It is often said of the Greeks that they were over much inclined to theorize. It is true that they were keen to "explain" everything, and that in their efforts they displayed a great fertility in the invention of hypotheses; but the reproach implied in the oft-repeated re-

mark applies to the Greeks no more than to modern representatives of science, who have merely ignored their debt to the past and hence count themselves superior. All science rests upon observed facts, which it attempts to explain by applying to the interpretation of them principles which are conceived to underly observed facts in another and supposedly related field. So much is common to all science, ancient and modern alike. What distinguishes modern from ancient science is only the clarified vision which has served to define more accurately the facts really observed and to limit the spheres within which one may safely reason from analogy. Little by little the gaps of human knowledge have been narrowed by intercalating sciences with their appropriate facts and principles, and with the multiplication of sciences has come a corresponding consciousness that empirical principles can be safely applied, even tentatively, only to closely related facts. The natural, and indeed under the circumstances inevitable, failure of the Greeks in the dawn of science to observe these necessary limitations to analogical reasoning, gives to their science, when compared with that of to-day, the appearance of wild and somewhat irresponsible speculation. The impression of empty theorizing is aggravated by another characteristic of the Greeks, which appears most markedly in their literature. I refer to their reticences, imposed upon their artists by a natural and highly cultivated esthetic sensibility. They prefer to give us a finished product in which there shall remain as few traces as possible of the "accidents" of production. All the scaffolding, all the mechanical devices employed in the erection of their symmetrical structures are removed, and they stand forth as eternally existent types, mysteriously let down from heaven. Occasionally an uncompleted structure, a half-finished statue, or the Athenian Propylaea, will disclose what Greek art, left to perfect its work, would have concealed with preternatural *honte*. So too Greek philosophers, in depicting the sublimest of all works of art, the Kosmos, might naturally reveal its laws and principles of operation, but they generally concealed the stages by which they mounted to an apprehension of them. Above all, they rarely mentioned the homely facts of observation which suggested their theories. Hence many, who possess little knowledge either of human life or of the operations of the human mind, have been misled into the indefensible error of

supposing that the Greeks by some mysterious process created their views of the world out of their inner consciousness without a *ποῦ στῶ* in the realm of fact. Fortunately for us there has survived a mass of early writings which for the most part does not deserve the name of literature, because it was not wholly subjected to the principles of esthetic composition. In the Hippocratic treatises more than anywhere else we find revealed the observations in detail upon which the generalizations and inferences of Greek science were erected. In the interest of science and of the history of human thought it is of the greatest importance that we note these observations and the uses to which they were put in the explanation of other phenomena.

One of these precious observations is referred to in the words we have cited. The Greeks were well aware that water tends to seek a level. When they wished to characterize a world utterly topsy-turvy, in which everything was at cross-purposes and nature was violated, they quoted or alluded by preference to the words of Euripides,

*ἄνω ποταμῶν ἱερῶν χωροῦσι παγαί·  
καὶ δίκαια πάντα πάλιν στρέφεται.*

Hippocrates refers repeatedly to this fact, *Περὶ φύσιος παιδίου*, 24, 25 (7, 522 L.), 22 (7, 514 L.); *Περὶ φυσέων*, 14 (6, 112 L.); *Περὶ τόπων τῶν κατὰ ἄνθρωπον*, 9 (6, 292 L.). But there was another homely observation which ran counter to this.

Water may often be seen standing in considerable globules on a table or other plane surface at a height above the surrounding level without beginning to flow. So far as I know, the Greeks were not aware of the fact of surface tension in liquids by which science now explains this phenomenon and the related one of bubbles. They did know, however, that if one moistens the surface next to the up-standing globules, they will flow off. Once the flow is started, the water will continue to flow down hill. Other references to this principle occur in Hippocrates: *Περὶ τόπων τῶν κατὰ ἄνθρωπον*, 9 (6, 292 L.), for which see above, p. 146 sq.; *Περὶ φύσιος παιδίου*, 21 (7, 512 L.) *καὶ ὁκόταν ἀφίκηται ἐς τὰς μήτρας, ἰδέην ἔσχει τοῦ γάλακτος, καὶ τὸ παιδίον ἀπ' αὐτοῦ ἐπαυρίσκειται ὀλίγον, οἱ δὲ μαζοὶ δεχόμενοι τὸ γάλα ἀείρονται πιμπλάμενοι· καὶ ὁκόταν τέκη, ἀρχῆς κινήσιος ὑπογενομένης, χωρεῖ τὸ γάλα ἐς τοὺς μαζοὺς τούτους, ἣν θηλάζῃ. ἔχει γὰρ οὕτω· θηλαζομένοις τοῖν μαζοῖν εὐρώωτερα γίνεται τὰ φλέβια ἐς τοὺς μαζοὺς· εὐρώωτερα δὲ*

γενόμενα, ἀπὸ τῆς κοιλίης ἔλκοντα τὸ πιαρόν, τοῖν μαζοῖν διαδιδόασιν. Here, however, the principle is somewhat obscured by being combined with that of ἔλξις. In *Περὶ νούσων* Δ, 50 (7, 588 L.) τὸ ἐπὶ τραπέξης ὕδωρ is connected with the observation of the stoppage of a liquid's flow from a narrow-necked flask inverted upright. There is probably an allusion to the principle in *Γυναικείων* Α, 16 (8, 54 L.) πρὸς γὰρ τὸ κινεῖμενον φιλέει ἵναι and in other passages where κινεῖσθαι occurs in the gynecological treatises. *Περὶ φύσιος παιδίου*, 30 (7, 538 L.) μετὰ δὲ ταῦτα ὕδρωψ ἔρχεται αἱματώδης ἀπὸ τε τῆς κεφαλῆς καὶ τοῦ ἄλλου σώματος, ἀποκριθεὶς ὑπὸ βίης τε καὶ πόνου καὶ θερμῆς, καὶ ὁδὸν ἀφηγήσατο τῇ τῶν λοχίων καταρρήγνυται τῶν γυναικῶν, ἥκιστα μὲν ἐν τῷ πρώτῳ τόκῳ, ἔπειτα δέ, ὡς ἂν πλειόνων πειρέωνται τόκων, ἔτι μᾶλλον καταρρήγνυται διακενουμένων τῶν φλεβῶν ὑπὸ τῆς καθάρσιος τῶν λοχίων. In this passage I suspect that we should read ὁδὸν ὑφηγήσατο, as in other similar instances. Another observation, which ran counter to the principle that liquids tend to flow down hill, that of capillarity, was doubtless known to the Greeks. This they must have known from their experience with lamps. Gomperz, *Philol.* LXX, p. 221, sees the first recognition of it in Hippocr., *Περὶ ἀρχαίης ἱητρικῆς*, 23. He refers, of course, to c. 22. The attraction of wool for moisture and the capacity of loose masses of wool to hold larger quantities of it than tightly woven woolen fabrics were well known to the Greeks, as appears from *Περὶ γυναικείων* Α, 1 (8, 12 L.) and *Περὶ ἀδένων*, 16 (8, 572 L.); but these references apparently apply to the attraction of moisture from the air, as does Lucretius, 1, 305; 6, 470 sq; 6, 616 sq.

27 (7, 528 L.) ἦν δὲ τις βούληται ἐννοεῖν τὰ ῥηθέντα ἀμφὶ τούτων ἐξ ἀρχῆς ἐς τέλος, εὐρήσει τὴν φύσιν πᾶσαν παραπλησίην ἐοῦσαν τῶν τε ἐκ τῆς γῆς φυομένων καὶ τῶν ἐξ ἀνθρώπων.

Littre and Ermerins have, I believe, wrongly punctuated and interpreted this passage; for the phrase ἐξ ἀρχῆς ἐς τέλος belongs not to the preceding clause, but to the following, serving indeed to enforce πᾶσαν. Cp. c. 29 (7, 530 L.) ὧδε ἔχουσιν εὐρήσεις πᾶσαν μέχρις ἐς τέλος. It seems obvious also that ἐξ before ἀνθρώπων was erroneously added by a scribe out of deference to ἐκ τῆς γῆς. A careful reader would note this even if he did not know that for τῶν [ἐξ] ἀνθρώπων there was a variant reading, preserved in Cξ, τὴν ἀνθρωπίνην φύσιν.



28 (7, 528 L.) καὶ οὐκ ἔστιν ἀτρεκέλη κρίναι.

Ermerins saw, as did I, that we must read ἀτρεκέλη.

30 (7, 534 L.) τοῦτο δὲ ἦν ἀεὶ γίνεται, ἐν φύσει καὶ ἐν γένει μητρῴδον σφὶν ἔστιν.

Littre and Ermerins agree in placing the comma after γίνεται. It should be placed after γένει. Littre renders, "s'il en est constamment ainsi, cette condition leur est originelle, naturellement et specialement." He refers to Περὶ νούσων Δ, 34 (7, 546 L.) οὐδὲν ἕτερον ἐτέρῳ ἔφιν, ὅτι μὴ συγγενές. The parallel is germane, but the translation is wrong. Fuchs is more nearly right: "Kommt das immer vor, in Natur und Geschlecht, so ist es von der Mütter vererbt." But Fuchs, like his predecessors, errs in regard to the meaning of ἐν φύσει καὶ ἐν γένει. One who studies attentively the extremely varied use of φύσις in Hippocrates, which baffled even Galen, will readily understand why our author added καὶ ἐν γένει. The whole phrase is another instance of the common defining ἐν διὰ δυοῖν, which I have elsewhere illustrated (*On Anaximander, Class. Philol.*, VII, p. 212 sq.) by the locutions ἀρχὴ καὶ στοιχεῖον, ἀρχὴ καὶ πηγὴ, ἀρχὴ καὶ ρίζα. As ἀρχὴ had a great variety of meanings, which it might be desirable for the sake of clearness to differentiate by the addition of more specific synonyms, so φύσις had, among a multitude of other meanings, that also of family or stock, which our author distinguishes by adding καὶ ἐν γένει. That weakness or disease may be inherited was a common opinion among Greek physicians; cp. Περὶ ἰρῆς νούσου, 2 (6, 364 L.) ἀρχεται δὲ (sc. epilepsy) ὥσπερ καὶ τᾶλλα νοσήματα κατὰ γένος. In saying μητρῴδον σφὶν ἔστιν our author appears to express the belief that a female defect may be handed down from parent to offspring by matriherital transmission only, excluding the operation of atavism in the male line. This belief is hardly reconcilable with that of the author of Περὶ διαίτης, which assumes that male and female contributions are derived from both parents.

#### ΠΕΡΙ ΝΟΥΣΩΝ Δ

32 (7, 542 L.) ἀποφανέω δὲ ὅπως ἐν ἐκάστη τουτέων τῶν ιδεῶν καὶ πλείω καὶ ἐλάσσω ἐν τῷ σώματι γίνεται, καὶ ὑπὸ τούτου νοσέουσι, καὶ ὅτι αἱ νοῦσοι κρίνονται ἐν τῇσι περισσῇσιν ἡμέρησι, καὶ τίνες ἀρχαὶ τῶν νούσων εἰσὶ, καὶ ὅκοῖα αὐτέων ἐκάστη ἐν τῷ σώματι ἐργασμένη τὴν νοῦσον

ἐπάγει, καὶ ὑπὸ τὸ αὐτὸ ῥίγος πυρετῶδες γίνεται, καὶ διὰ τί τὸ πῦρ ἐπιπίπτει μετ' αὐτό.

This passage is utterly corrupt, as is shown by comparison with c. 53 (7, 594 L.). In order to save space I will give it as I think it should be printed. The corrections here proposed were all found independently, when on comparing Ermerins I learned that he had anticipated me at five points.

ἀποφανέω δὲ ὅκως ἐκάστη τῶν ἰδεῶν καὶ πλείων καὶ ἐλάσσων ἐν τῷ σώματι γίνεται, καὶ ὑπ' ὅτου νοσέουσι, καὶ <δι> ὅτι αἱ νοῦσοι κρίνονται ἐν τῇσι περισσῇσιν ἡμέρησι, καὶ <αἷ> τινες <αἷ> ἀρχαὶ τῶν νούσων εἰσὶ, καὶ ὅκοῖα αὐτέων ἐκάστη ἐν τῷ σώματι ἐργασαμένη τὴν νοῦσον ἐπάγει, καὶ ὑπ' ὅτου τὸ ῥίγος τὸ πυρετῶδες γίνεται, καὶ διότι τὸ πῦρ ἐπεισπίπτει μετ' αὐτό.

Corresponding changes are to be made here and there in c. 53. They have for the most part been anticipated by Ermerins.

34 (7, 548 L.) ἀνάγκην οὖν τῷδε προσηγαγόμεν, ὅτι ἀπὸ τῶν βρωμάτων καὶ τῶν ποτῶν ἐς τὴν κοιλίην χωρέντων ἔλκει τὸ σῶμα κατὰ τὰς πηγάς, ἃς ὠνόμασα, ἢ ὁμοίη ἱκμὰς τὴν ὁμοίην διὰ φλεβῶν.

I would not alter the text, except that I should read διὰ <τῶν> φλεβῶν, because the process is general throughout the body. But Littré and Fuchs have erred in regard to the meaning of κατὰ τὰς πηγάς, the former rendering "aux sources," the latter "in die Quellen." Ermerins also misses the true meaning of the text. Having discussed these πηγαὶ in my article *On Anaximander*, I may here confine myself to the remark that κατὰ τὰς πηγάς here means "according to their respective reservoirs," anticipating the distributive expression which immediately follows, ἢ ὁμοίη τὴν ὁμοίην. Each reservoir, having its specific contents, attracts its own appropriate humor. This locution might be illustrated with scores of examples from the *Corpus*: one near at hand will serve *instar plurium*, c. 32 (7, 542 L.) κατὰ τοὺς τοκῆς, which Littré and Fuchs have not failed to understand.

35 (7, 550 L.) ἦν δὲ ἐς τὸ σῶμα ἀφίκεται, κέλσέ οἱ μέμικται τῇ ἄλλῃ ἱκμάδι.

Here οἱ may be nothing more than a rather pointless reference to the patient, such as occurs not unfrequently in this treatise; but I

suspect that οἱ arose from ΘΙ written as a correction above CE in κείσε and that we should therefore write κείθι, as in c. 37 (7, 554 L.) κείθι δὲ μίσγεται τῇ ἄλλῃ ἱκμάδι, and in c. 50, quoted below. I find that Ermerins also reads κείθι.

50 (7, 582 L.) καὶ ἡ ταλαιπωρίη δὲ τοιοῦτον ἐργάζεται· ὁκόταν γὰρ οἱ ἄνθρωποι ταλαιπωρέωσιν, οἷσιν ἂν μάλιστα τοῦ αἵματος ταλαιπωρίη ᾗ, κείθι στηρίζεται.

Here Ermerins has suggested τωῦτό for τοιοῦτον, which had occurred also to me. But there is probably another corruption in the sentence; for I think we should clearly read ὅθι for οἷσιν, corresponding to κείθι.

51 (7, 586 L.) πρὶν δὲαραχθῆναι οὐκ ἔχει ἐκχωρέειν τὸ πλεῖον τοῦ ὑγροῦ, ἀλλ' ἂνω καὶ κάτω εἰλέεται μεμιγμένον τῷ ἄλλῳ ὑγρῷ· πάντα γὰρ πλήρᾳ ἐστίν· ἐν δὲ τῇαραχῇ κενούται· κενούται δὲ τι ἕτερον ἐτέρου μᾶλλον, καὶ τὸ πλεῖον ἐὼν χωρίον κατίσχει.

The last clause has made trouble. Littré renders, "et l'endroit qui est plein garde"; Ermerins, "quodque copia superat, loco continetur"; Fuchs, "und die angefüllte Stelle behält was sie hat." The rendering of Ermerins is of course impossible, those of Littré and Fuchs are hardly in keeping with the thought. It seems to me that πλεῖον (whether we read πλεῖον or πλέον) here is the same as in the first clause, being the comparative. It answers to μᾶλλον, and one may raise the question whether it is better to read ἐὼν or <κεν>εὼν. The author appears to mean that in the process of churning, which separates the humors, there arise empty receptacles of varying size, and the larger receptacle retains the diseased (ἄπεπτον, unmixed) humor.

52 (7, 590 L.) νῦν δὲ ἐρέω τὰ ἐκ τοῦ οὐρανοῦ, ἣν ἀνεπιτήδεια γένηται φύντα ἐν τῷ σώματι, τίνα ἐργάζεται καὶ ὁκόταν κρατέῃ ἐν τῷ σώματι τοῦ ὑγροῦ.

It is obvious that φύντα (v. l. φύντα) is corrupt. The context clearly indicates what the writer intended; for he is speaking of the deleterious effects of cold on the system. We should doubtless read ψύχα for φύντα. I should place a period after οὐρανοῦ, and a comma after ἐργάζεται.

55 (7, 600 L.) ὥσπερ ἐφ' ὕδατι μὴ καθαρῷ παραχθέντι ἐν κύλικι ἢ ἐν χαλκῷ καὶ καταστάντι ὑποστάθμῃ ἄλις γίνεται ἐν τῷ μέσῳ, οὕτω καὶ ἐν τῇ κύστει ἀπὸ τοῦ οὔρου, μὴ καθαροῦ ἐόντος· καὶ οὐκ ἐξουρέεται, ἅτε ἐν τῷ κοίλῳ ἐούσα, καὶ μάλιστα ἀλῆς γινομένη ὑπὸ ὀδύνης οὐ διέρχεται διὰ τῆς οὐρήσιος.

I do not think it likely that our author wrote ἄλις γίνεται and ἀλῆς γινομένη side by side: it should be either ἄλις or ἀλῆς in both clauses, probably the latter. In such matters our MSS. do not help us. Then, in view of the close parallelism in the comparison, it is hard to accept ἐφ' ὕδατι beside ἀπὸ τοῦ οὔρου. The dative prevents us from changing ἐπὶ to ἀπό, but ἐπὶ cannot be taken as referring to place, and it is unlikely that it means "in the case of." I think it probable that we should read ὥσπερ ἐφ' ὕδατι . . . ὑποστάθμῃ γίνεται, giving the same point of view at least as ἀπὸ τοῦ οὔρου. For ὑπὸ ὀδύνης E I J K have ὑπὸ δίνης, which seems certainly correct; for ὑπὸ ὀδύνης, *prae dolore*, is hardly in place. The reasons why the stone does not pass off have already been sufficiently expressed in ἅτε ἐν κοίλῳ ἐούσα, which refers to the bottom of the bladder, and in καὶ μάλιστα ἀλῆς γινομένη, which alludes to its solid massiveness; ὑπὸ ὀδύνης seems to be a deliberate "emendation" by one who knew the excruciating pains of the disease. But ὑπὸ δίνης is wanted to complete the sense of ἀλῆς γινομένη, for it is the revolution of the urine in the churning motion produced in the bladder that creates the solid mass of the stone. There is good evidence to prove that when a compound was stirred in a dish or cup the favorite method, in ancient times as now, was to produce a revolution in its contents. Heraclitus, fr. 125 Diels, says καὶ ὁ κυκεὼν δίσταται <μὴ> κινούμενος, and Theophrastus, *de Ver-tigine*, 9 sq., notes that this implies a δίνη. Hippocrates, speaking of the same disease of the bladder, Περὶ ἀέρων ὑδάτων τόπων, 9 (2, 38 L.) says ὁκόσων μὲν ἢ τε κοιλίῃ εὐρός τε καὶ ὑγερὴ ἔστι καὶ ἡ κύστις μὴ πυρετώδης μηδὲ ὁ στόμαχος τῆς κύστιος συμπεφρακταὶ λίην, οὗτοι μὲν διουρεῖσι ῥηϊδίως, καὶ ἐν τῇ κύστει οὐδὲν συστρέφεται. ὁκόσων δὲ ἂν ἡ κοιλίῃ πυρετώδης ᾖ, ἀνάγκη καὶ τὴν κύστιν τωὐτό πάσχειν. ὁκόταν γὰρ θερμανθῇ μᾶλλον τῆς φύσιος, ἐφλέγμηνεν αὐτῆς ὁ στόμαχος. ὁκόταν δὲ ταῦτα πάθῃ, τὸ οὔρον οὐκ ἀφήσιν, ἀλλ' ἐν ἐωυτῇ συνέψι καὶ συγκαίει. καὶ τὸ μὲν λεπτότατον αὐτοῦ ἀποκρίνεται καὶ τὸ καθαρώτατον διεῖ καὶ ἐξουρεῖται, τὸ δὲ παχύτατον καὶ θολωδέστατον συστρέφεται καὶ συμπή-

γνυται. <καὶ> τὸ μὲν πρῶτον μικρόν, ἔπειτα δὲ μέζον γίνεται. κυλινδεύμενον γὰρ ὑπὸ τοῦ οὖρου, ὃ τι ἂν συνίστηται παχύ, συναρμόζει πρὸς ἑωυτὸ καὶ οὕτως αὐξεται τε καὶ πωροῦται. Here the reference to a *δίνη* is unmistakable. In *Περὶ φύσιος παιδίου* 17 (7, 496 sq. L.) the *διακόσμησις* of the embryo by the action of the *πνεῦμα* is described, and the process is illustrated by an experiment in which the experimenter inserts a tube into a bladder and then, introducing water and various solids, blows into the tube, producing a revolution of the contents. First there ensues a general mixture and then a segregation of like to like in the various solids, arranged in the order of their density, the heaviest at the center. The process agrees precisely with that described by Theophrastus, *de Vertigine*, 10, and with that assumed by the early cosmologists in the *διακόσμησις* of the universe. It was just such observations which led the philosophers to lay so much stress on the *δίνη* as the essential cosmic process.

#### ΠΕΡΙ ΠΑΡΘΕΝΙΩΝ

1 (8, 466 L.) ἀρχή μοι τῆς ξυνθέσιος τῶν αἰειγενέων ἱητρικῆς· οὐ γὰρ δυνατὸν τῶν νοσημάτων τὴν φύσιν γινῶναι, ὃ πέρ ἐστι τῆς τέχνης ἐξευρεῖν, ἣν μὴ γινῶ τὴν ἐν τῷ ἀμερεῖ κατὰ τὴν ἀρχήν, ἐξ ἧς διεκρίθη.

Of the variants it is hardly necessary to speak; the text tradition is fairly clear, except that C has *νεηγενέων* for *αἰειγενέων* and *μέρει* for *ἀμερεῖ*, both of which readings are clearly wrong. Ermerins inserts <ἀπὸ> before τῶν *αἰειγενέων* and reads γινῶ τις αὐτὴν ἐν τῷ μέρει. With the exception of *τις*, no one will favor his additions. His rendering clearly shows that he had no notion of what the writer intended to say.

Littre (8, 527 sq.) has discussed this passage at length. Only one point that he makes is good, — to wit, that *ἱητρικῆς* cannot be taken as agreeing with *ξυνθέσιος*. He proposes to connect τῶν *αἰειγενέων* with *ξυνθέσιος*, which, as we shall presently see, is a mistake.

The first point to determine is the extent of the introductory clause. To do this one needs only to compare a number of such beginnings, which I collected in my essay *On Certain Fragments of the Pre-Socratics* (*Proceedings of the American Academy of Arts and Sciences*, XLVIII), p. 732 sq. The following examples will suffice: *Περὶ τόπων τῶν κατὰ ἄνθρωπον*, 2 (6, 278 L.) φύσις τοῦ σώματος, ἀρχή τοῦ ἐν ἱητρικῇ

λόγου. Περὶ τέχνης, 4 (6, 6 L.) ἐστὶ μὲν οὖν μοι ἀρχὴ τοῦ λόγου, ἡ καὶ ὁμολογηθήσεται παρὰ πᾶσιν. Ion of Chios, fr. 1 (Diels, *Vorsokr.*<sup>3</sup>, I, 286, 24) ἀρχὴ δέ μοι τοῦ λόγου· πάντα τρία καὶ οὐδὲν πλέον ἢ ἔλασσον τούτων τῶν τριῶν. These parallels show that our author began thus: ἀρχὴ μοι τῆς ξυνθέσιος.

More difficult is the second clause τῶν αἰειγενέων ἱητρικῆς. That ἱητρικῆς = ἱητρικῆς τέχνης might indeed be readily guessed, but is made certain by the clause ὃ πέρ ἐστιν τῆς τέχνης ἐξευρεῖν; for the writer would not have said τῆς τέχνης if he had not previously stated of what art he was speaking. It is easy also to see that there is a lacuna in the clause, but he would be a rash man who attempted with perfect assurance to fill it. The parallels above cited predispose one to the belief that the lacuna is not long; for they suggest that the second clause was probably not much longer than the first and was quite as laconic. Perhaps he may have written τῶν αἰειγενέων <γνώσις τῆς> ἱητρικῆς or τῶν αἰειγενέων <φύσιν εἶδέναι τῆς> ἱητρικῆς. "It is the business of medicine to have a knowledge of the eternal." Such sentences are of course of frequent occurrence, as e. g. Arist. *Poet.* 1456<sup>b</sup> 10 ἃ ἐστὶν εἶδέναι τῆς ὑποκριτικῆς. Of course there are innumerable possibilities. Thus one thinks of Περὶ ἱητροῦ, 4 (9, 208 L.) ἐστὶ δὲ οἰκείη ἐπίδεις τῆς ἱητρικῆς, which would justify one in adding οἰκείη or οἰκείον in the supplements above proposed.

But what are τὰ αἰειγενέα? That the phrase is equivalent to τὰ θεῖα is in itself probable and supported by Plato, *Symp.*, 206 E ὅτι αἰειγενές ἐστὶ καὶ ἀθάνατον ὡς θνητῷ ἡ γέννησις and *Legg.*, 773 E χρὴ τῆς αἰειγενοῦς (= ἀγήρω) φύσεως ἀντέχεσθαι τῷ παῖδας παιδῶν καταλείποντα αἰεὶ τῷ θεῷ ὑπηρέτας ἀνθ' αὐτοῦ παραδιδόναι. At the mention of τὰ θεῖα one thinks at once of the heavenly bodies, which the Greeks called τὰ θεῖα κατ' ἐξοχὴν, cp. Plato, *Apol.*, 26 C sq., etc. If this were our author's meaning, we should have a parallel to Περὶ ἀέρων ὑδάτων τόπων, 2 (2, 14 L.). An even more striking parallel would be the noble passage in Arist., *Part. Animal.*, A 5, 644<sup>b</sup> 22 sq. But we must not forget that our author has given a reason for asserting the claim of medicine to the science of τὰ θεῖα. "For," says he, "it is impossible to know the nature of diseases, which it is the business of medicine to discover, unless one know the nature of things in their primal state of aggregation, out of which they were segregated." It can

hardly be doubted that in τὴν ἐν τῷ ἀμερεῖ <φύσιν> he refers to what he has previously called τὰ αἰεγενέα. To me it seems certain that he refers to what we call the elements. We know that Empedocles spoke of them as "gods," giving to each a divine name, and calling them immortal, fr. 35, 14 Diels, αἰψα δὲ θνήτ' ἐφύοντο, τὰ πρὶν μάθον ἀθάνατ' εἶναι, ζῶρά τε τὰ πρὶν ἄκρητα, διαλλάξαντα κελεύθους. By τὴν ἐν τῷ ἀμερεῖ <φύσιν> our author meant the same as if he had said τὴν ἀμερῇ φύσιν, a locution for which examples are given in Diels, *Vorsokr.*<sup>3</sup>, I, 309, 6 adnot., and in my essay *On Certain Fragments of the Pre-Socratics*, p. 729 sq. If he was really thinking of Empedocles, he probably had in mind the complete mixture of the elements in the σφαῖρος, out of which, by the action of Νεῖκος, the elements were segregated. He would then have regarded the σφαῖρος as absolutely, or at least as relatively to the present world, the beginning. He may, however, have had in mind the ἄκριτος (or ἄκρητος?) κόσμος of Περὶ ἑβδομάδων, 2. See Roscher, *Die hippokratische Schrift von der Siebenzahl*, pp. 6 and 131. In any case, it would appear certain that he was of the number of those whom the writer of Περὶ ἀρχαίης ιητρικῆς, 20 (I, 620 L.), so sharply assailed, λέγουσι δὲ τινες ιητροὶ καὶ σοφισταί, ὡς οὐκ εἴη δυνατὸς ιητρικὴν εἰδέναι ὅστις μὴ οἶδεν, ὃ τί ἐστὶν ἄνθρωπος καὶ ὅπως ἐγένετο πρῶτον καὶ ὁπόθεν συνεπάγη ἐξ ἀρχῆς.

#### ΠΕΡΙ ΑΝΑΤΟΜΗΣ

I (8, 538 L.) νέφροι δὲ ὁμοιορυσμοί, τὴν χροίην δὲ ἐναλίγκιοι μήλουσιν· ἀπὸ δὲ τουτέων ὀχετοὶ σκαληνοειδῆες ἄκρην κορυφὴν κύστιος κεῖνται . . . καὶ τὰ μὲν ἐξ ἀνὰ μέσον ἐντὸς φύσις ἐκοσμήθη.

There are, I believe, two corruptions in this passage. I do not understand ἄκρην κορυφὴν . . . κεῖνται, and ἄκρην seems to be unnecessary. I suspect that we should read ἄχρι ἐς τὴν κορυφὴν . . . τείνονται. Again, in the last clause, τὰ μὲν ἐξ . . . φύσις ἐκοσμήθη is, I think, impossible. Here C has ἐκόσμεν, doubtless a mistake for ἐκόσμησεν. But ἐκόσμησεν is clearly an ancient conjecture proposed to clear up a difficulty, which Ermerins tried to meet by writing φύσις ἐκοσμήθη. Neither remedy is satisfactory, because there is no call in the context for φύσις in any form. But this is not all. The phrase ἀνὰ μέσον ἐντὸς is highly suspicious. The remedy seems to be easy, for ἐντὸς

φύσις is obviously the seat of the difficulty, and we should read καὶ τὰ μὲν ξὺς ἀνὰ μέσον ἐντοσθίδια ἐκοσμήθη. The word ἐντοσθίδια elsewhere occurs but once, I believe, in Hippocrates, Περὶ ἀφόρων, 230 (8, 440 L.), though it is not so rare in later Greek.

## ΠΕΡΙ ΑΔΕΝΩΝ

Diels, *Über einen neuen Versuch, die Echtheit einiger Hippokratischen Schriften nachzuweisen*, p. 1153 sq., adduces evidence from the use of dual forms, from which he concludes that this brief treatise is an Alexandrine forgery. Various other arguments against its early date have at different times been advanced, drawn chiefly from its want of attestation and from certain points of its physiological teachings. Some of these considerations appear to me to be strongly in favor of Diels' view. I will add a few others which have not, to my knowledge, been hitherto urged. Diels draws attention to the form οὐάτων and the straining after effect in δύ' ἐστὸν κακία. To these examples let me add c. 17 (8, 574 L.) τοῖσι κυρίως τοῦ σώματος, καρδίη, πνεύμονι and c. 7 (8, 562 L.) ἐπὴν δὲ ἀνῆ τὴν ἔλξιν, where τὴν ἔλξιν is equivalent to τὸ ἐλκόμενον, a usage without parallel in Hippocrates, but not unexampled in later Greek. (Cp. *θεραπείην*, Περὶ καρδίας, 3 (9, 82 L.), below p. 188.) In c. 9 (8, 564 L.) αὕτη πᾶσα ἀπαναισιμῶται ἰκέλη τῆς πρόσθεν, we might be inclined to propose τῇ ἔμπροσθεν, but the somewhat rare dative is probably only one more indication of the author's conscious archaizing. I am not sure that the use of *τόνος* in c. 15 (8, 570 L.) is not a Stoic reminiscence, which possibility receives a certain color of probability from the insistence on teleology of a sort not elsewhere represented in Hippocrates, but wholly in the manner of the Stoics and Galen. Compare c. 7 (8, 560 L.) *χρεῖη τοιγδε κτλ.* c. 4 (8, 558 L.) ἡ γὰρ φύσις ποιεῖ ἀδένas καὶ τρίχas· ἄμφω χρέος τωὺτὸ λαμβάνουσιν. c. 8 (8, 562 L.) τὰ δ' αὐτὰ οἱ δοκεῖ παρέχειν ἀγαθὰ καὶ κακά. c. 17 (8, 574 L.) ἀγαθὰ δὲ ἔχουσι τοῖσιν ἔμπροσθεν ὁμοία.

2 (8, 556 L.) *πονέουσι δὲ οὐ κάρτα, ἀλλὰ τῷ ἄλλῳ σώματι, ἐπὴν πονέωσι δέ, ἢ δι' ἰδίην νοῦσον· παῦρα δὲ καὶ τῷ σώματι ξυμπονέουσιν.*

That this passage is corrupt is obvious. The remedies proposed are unsatisfactory. I think it probable that we should read: *πονέουσι*



δὲ οὐ κάρτα <αὐταί>, ἀλλὰ τῷ ἄλλῳ σώματι, ἐπὴν πονέωσί γε, <ξυμπονεοῦσι μᾶλλον> ἢ δι' ἰδίην νοῦσον· παῦρα δὲ καὶ τῷ <ἄλλῳ> σώματι ξυμπονεοῦσιν. Here the rare poetical adverb παῦρα also deserved notice.

10 (8, 564 L.) ἡ κεφαλὴ καὶ αὕτη τὰς ἀδένas ἔχει, τὸν ἐγκέφαλον ἵκελον ἀδένι· ἐγκέφαλος γὰρ καὶ λευκὸς καὶ ψαφαρός, ὅκως περ καὶ ἀδένες, καὶ ταῦτ' ἀγαθὰ τῇσιν ἀδέσι ποιεῖ τὴν κεφαλὴν ἐοῦσαν, διὰ τὰ εἰρημένα μοι, τιμωρέων ὁ ἐγκέφαλος ἀποστερεῖ τὴν ὑγρασίην καὶ ἐπὶ τὰς ἐσχατίας ἔξω ἀποστέλλει τὸ πλεόν ἀπὸ τῶν ῥοῶν.

Here we should read καὶ αὕτῃ, as Ermerins also has seen, and possibly τινὰς ἀδένas. Doubtless we should read also ὅκως περ καὶ <αἱ> ἀδένες, and place a period or colon after ποιεῖ. After κεφαλὴν we must supply <ὕγρην> and probably omit ἀπὸ before τῶν ῥοῶν. Our author shares the word ἐσχατιή with the writer of Περὶ καρδίας, 4 (9, 82 L.). The two treatises have other things also in common; see below, p. 189, where reference will be made to our passage.

#### ΠΕΡΙ ΣΑΡΚΩΝ

1 (8, 584 L.) ἐγὼ τὰ μέχρι τοῦ λόγου τούτου κοινῇσι γνώμῃσι χρέομαι ἐτέρων τε τῶν ἔμπροσθεν, ἀτὰρ καὶ ἐμευτοῦ· ἀναγκαιῶς γὰρ ἔχει κοινὴν ἀρχὴν ὑποθέσθαι τῇσι γνώμῃσι βουλόμενον ξυνθεῖναι τὸν λόγον τόνδε περὶ τῆς τέχνης τῆς ιητρικῆς.

Editors and translators have been much troubled by the phrase μέχρι τοῦ λόγου τούτου, some taking it to refer to writings antedating Περὶ σαρκῶν, others, as *e. g.* Littré, regarding it as referring to the preliminaries or introduction of the present treatise. Ermerins, taking the former view, goes so far as to change χρέομαι to ἐχρησάμην and ἔχει to εἶχε. Doubtless Littré was influenced in arriving at his conclusion by the sentence with which c. 1 closes: νῦν δὲ ἀποφαίνομαι αὐτὸς ἐμευτοῦ γνώμας; but this proves nothing. It must be allowed that this expression is curious — so curious, in fact, that I am half inclined to doubt whether it was written by the author of the treatise. In the introductory sentence above quoted he says that he is employing notions which he holds in common with his predecessors. No stretch of the imagination can make it seem probable that this common stock of ideas is exhausted by the scant pronouncement of c. 1; and in the discourse which follows it is obvious that our author is drawing

upon such a stock of current notions, both in the cosmology and physiology, and in the statements about the number seven. It is quite impossible for us with our meager knowledge of fifth century thought to distinguish his own contribution from the ideas that had become public property. In view of this situation I regard it as certain that the phrase in question means "so far forth as concerns the present treatise." This use of μέχρι is discussed by Vahlen, *Gesammelte Philologische Schriften*, I, p. 16 sq., and Bywater on Aristotle's *Poetics*, 1449<sup>b</sup> 9.

For the need of laying a foundation for a discourse in opinions commonly accepted, compare *Περὶ τέχνης*, 4 (6, 6 L.) ἔστι μὲν οὖν μοι ἀρχὴ τοῦ λόγου, ἣ καὶ ὁμολογήσεται παρὰ πᾶσιν, and Diogenes of Apollonia, fr. 1 Diels, λόγου παντὸς ἀρχόμενον δοκεῖ μοι χρεῶν εἶναι τὴν ἀρχὴν ἀναμφισβήτητον παρέχεσθαι. This procedure is in the every-day practice of rhetorical discussion the analogue of the principle by which one starts in mathematics from axioms and in dialectic from hypotheses.

*Ibid.* περὶ δὲ τῶν μετεώρων οὐδὲ δέομαι λέγειν, ἣν μὴ τοσοῦτον ἐς ἄνθρωπον ἀποδείξω καὶ τὰ ἄλλα ζῶα, ὁκόσα ἔφν καὶ ἐγένετο, καὶ ὃ τι ψυχὴ ἔστιν, καὶ ὃ τι τὸ ὑγιαίνειν, καὶ ὃ τι τὸ κάμνειν, καὶ ὃ τι τὸ ἐν ἀνθρώπῳ κακὸν καὶ ἀγαθόν, καὶ ὅθεν ἀποθνήσκει.

In my *Περὶ Φύσεως*, p. 131, n. 197, I noted that we must read οὐδὲν δέομαι for οὐδὲ δέομαι and ὅκως for ὁκόσα. I did not then know that Ermerins had anticipated me in making the latter obvious correction. The corruption arose from the phrase καὶ τὰ ἄλλα ζῶα which appears strange in the context because no further attention is paid to the other animals. Above, p. 156 sq., I cited other examples of this practice of the early Greek scientists, which displays their wide horizon and at the same time their anthropocentric interest. For οὐδὲν δέομαι, "I don't want," see Shorey, *Class. Journ.*, II (1906-07), p. 171. There is, however, another correction to be made in our passage. We must read <ῆ> ψυχῇ, and place a colon after τοσοῦτον, which is followed by a natural asyndeton. For the use of τὰ μετέωρα here I would refer to my *Περὶ Φύσεως*, p. 131.

2 (8, 584 L.) δοκέει δὲ μοι ὃ καλούμεν θερμόν, ἀθάνατόν τε εἶναι καὶ νοεῖν πάντα καὶ ὄρῃν καὶ ἀκούειν καὶ εἶδέναι πάντα ἔοντα τε καὶ ἐσόμενα.

τοῦτο οὖν τὸ πλείστον, ὅτε ἐταράχθη πάντα, ἐξεχώρησεν εἰς τὴν ἀνωτάτω περιφορὴν· καὶ ὀνομῆναι μοι αὐτὸ δοκέουσιν οἱ παλαιοὶ αἰθέρα.

Ermerins is doubtless right in supplying <τὰ> before *έοντα*. Gossen in his article on Hippocrates in Pauly-Wissowa, VIII, 1838, says that our author knows the fire-theory of Heraclitus. This unintelligent remark is on a level with much else in his disappointing article. As a matter of fact one might use c. 2 as a text for a history of all Greek cosmological theories from Anaximander onwards. I propose, of course, to do nothing of the sort. The last clause, however, invites a few added remarks. One naturally thinks of Anaxagoras, who called fire by the name of *αἰθήρ* (Diels, *Vorsok.*<sup>2</sup>, I, 307, 35). But Empedocles occasionally did the same (*ibid.*, p. 159, § 33). Indeed our author may have had no special philosopher in mind; for *αἰθήρ*, being essentially a poetic and popular word, was too vague to lend itself readily to classification in a scientific scheme and fell outside the four-fold category of the elements. It was used, doubtless with conscious reference to its etymological connection with *αἶθω*, now for *πῦρ*, and again as the equivalent of *ἀήρ*. In dealing with cosmology the certain test is its location, for the order of the elements in the cosmological schemes of the ancients is invariable: earth, water, air, fire.

*Ibid.* ἡ δευτέρα μοῖρα κάτωθεν, αὐτὴ καλέεται μὲν γῆ, ψυχρόν καὶ ξηρόν καὶ πούλὺ κινούν.

Ermerins again rightly writes ἡ δὲ δευτέρα. Whether the *μὲν* in *αὐτὴ καλέεται μὲν γῆ* does not call for a supplement such as <ἔστι δὲ> *ψυχρόν κτλ.* is a fair question. In my essay *On Anaximander* (*Class. Philol.*, VII), p. 222, I suggested *πούλὺ κεινόν* for *πούλὺ κινούν*. I have no doubt that the proposal was essentially correct, but I should have gone a little farther and written *πολύκενον*. Any student of early Greek thought, and in particular of *Περὶ σαρκῶν*, must recognize at once that *γῆ* is not *πούλὺ κινούν*: fire, not earth, is the active element. Besides, *πολύκενος* was apparently a favorite word with the Atomists, and the next clause shows that it is required here: *καὶ ἐν τούτῳ ἐνὶ δὴ πούλὺ τοῦ θερμοῦ*. The *θερμόν* is in the interstices and empty spaces of the *γῆ πολύκενος*. Cp. Gilbert, *Meteorol. Theorien des griechischen Altertums*, p. 287, n. 2.

3 (8, 586 L.) καὶ τῷ χρόνῳ ὑπὸ τοῦ θερμοῦ ξηρανομένης τῆς γῆς, ταῦτα καταληφθέντα περὶ αὐτὰ ποιεῖ οἶον περ χιτῶνας.

Ermerins reads ταῦτα τὰ καταληφθέντα περὶ ἐνωτὰ σηπεδόνας ἐποίεε. Whether the change of tense was necessary may be doubted. Without knowing Ermerins' text I proposed αὐτὰ and οἶονπερεὶ in my *Antecedents of Greek Corpuscular Theories*, p. 137, n. 1. The vulgate reads οἶον περὶ, only one MS., K, reading οἶόν περ, according to Littré. I still think οἶονπερεὶ the probable reading: cp. Plato, *Theaet.*, 201 E, ἐγὼ γὰρ αὖ ἐδόκουν ἀκούειν τινῶν ὅτι τὰ μὲν πρῶτα οἶονπερεὶ στοιχεῖα, ἐξ ὧν ἡμεῖς τε συγκείμεθα καὶ τᾶλλα, λόγον οὐκ ἔχει. With our passage compare the cosmology of Diod. Sic., I, 7, especially 1-3: κατὰ γὰρ τὴν ἐξ ἀρχῆς τῶν ὄλων σύστασιν μίαν ἔχειν ἰδέαν οὐρανόν τε καὶ γῆν, μεμιγμένης αὐτῶν τῆς φύσεως· μετὰ δὲ ταῦτα διαστάντων τῶν σωμάτων ἀπ' ἀλλήλων, τὸν μὲν κόσμον περιλαβεῖν ἅπασαν τὴν ὁρωμένην ἐν αὐτῷ σύνταξιν, τὸν δὲ ἀέρα κινήσεως τυχεῖν συνεχοῦς, καὶ τὸ μὲν πυρῶδες αὐτοῦ πρὸς τοὺς μετεωροτάτους τόπους συνδραμεῖν, ἀνωφεροῦς οὐσης τῆς ταύτης φύσεως διὰ τὴν κουφότητα· ἀφ' ἧς αἰτίας τὸν μὲν ἥλιον καὶ τὸ λοιπὸν πλῆθος τῶν ἀστρων ἐναποληφθῆναι τῇ πάσῃ δίνῃ· τὸ δὲ ἰλυῶδες καὶ θολερὸν μετὰ τῆς τῶν ὑγρῶν συγκρίσεως ἐπὶ ταῦτ' καταστήναι διὰ τὸ βάρος· εἰλούμενον δ' ἐν ἐαυτῷ συνεχῶς συστρεφόμενον ἐκ μὲν τῶν ὑγρῶν τὴν θάλατταν, ἐκ δὲ τῶν στερεμνιωτέρων ποιῆσαι τὴν γῆν πηλῶδη καὶ παντελῶς ἀπαλὴν. ταύτην δὲ τὸ μὲν πρῶτον τοῦ περὶ τὸν ἥλιον πυρὸς καταλάμπαντος πῆξιν λαβεῖν, ἔπειτα διὰ τὴν θερμασίαν ἀναζυμουμένης τῆς ἐπιφανείας συνοιδῆσαι τινα τῶν ὑγρῶν κατὰ πολλοὺς τόπους, καὶ γενέσθαι περὶ αὐτὰ σηπεδόνας ὑμέσι λεπτοῖς περιεχομένας. This latter is probably the doctrine of Archelaus referred to by Plato, *Phaedo*, 96 B ἀρ' ἐπειδὴν τὸ θερμὸν καὶ τὸ ψυχρὸν (fire and water) σηπεδόνα τινὰ λάβῃ, ὥς τινες ἔλεγον, τότε δὴ τὰ ζῶα συντρέφεται; Burnet, *ad loc.*, refers σηπεδόνα λάβῃ to the formation of milk; but he is of course mistaken in this, as in taking συντρέφεται in the sense of 'being nourished.' Doubtless the union of the two conceptions in Epicurus (Lucretius, 5, 805 sq., Censorinus, 4, 9), which is not attested for earlier philosophers, suggested his interpretation.

*Ibid.* ὁκόσα δὲ ἐτύγγανε κολλωδέστερα ἔοντα καὶ τοῦ ψυχροῦ μετέχοντα, ταῦτα δὲ θερμαινόμενα οὐκ ἐδύναντο ἐκκαυθῆναι, οὐδὲ μὴν τοῦ ὑγροῦ γενέσθαι.

Ermerins reads ταῦτα δὴ and οὐδὲ μὴν ὑγρά γενέσθαι. The latter reading is very improbable. I propose <ἄνευ> τοῦ ὑγροῦ.

*Ibid.* κατὰ δὲ τὸν αὐτὸν λόγον καὶ ἡ φάρυγξ καὶ ὁ στόμαχος καὶ ἡ γαστήρ καὶ τὰ ἔντερα ἐς τὸν ἀρχὸν κοῖλα ἐγένοντο· τοῦ γὰρ ψυχροῦ αἰεὶ θερμαινόμενου τὸ μὲν περίξ ἐξωπτήθη ὅσον αὐτὸ κολλῶδες ἦν, καὶ ἐγένετο χιτῶν ὁ περὶ αὐτὸν μῆνιγξ, τὸ δὲ ἐντὸς τοῦ ψυχροῦ, οὐ γὰρ ἔην ἐν αὐτῷ οὔτε λιπαρὸν οὔτε κολλῶδες πούλιν, διετάρχη καὶ ἐγένετο ὑγρόν· κατὰ δὲ τὸν αὐτὸν λόγον καὶ ἡ κύστις, πούλιν ψυχρὸν ἀπολειφθέν, τὸ περίξ αὐτοῦ ὑπὸ τοῦ θερμοῦ θερμαινόμενον διελύθη καὶ ἐγένετο ὑγρόν· οὐ γὰρ ἔην ἐν αὐτῷ οὔτε τοῦ λιπαροῦ οὔτε τοῦ κολλῶδους· ὅσον δὲ περιῆν χιτῶν ἐγένετο, ἀτὰρ καὶ περὶ τῶν ἄλλων, ὅσα κοῖλα, τὸν αὐτὸν ἔχει τρόπον· ὅκου μὲν ἦν τοῦ κολλῶδους πλέον ἢ τοῦ λιπαροῦ, χιτῶν μῆνιγξ ἐγένετο.

Ermerins omits αὐτό (3), ὁ περὶ αὐτὸν μῆνιγξ (4), τὸ περίξ αὐτοῦ (6) and reads ἀποληφθέν for ἀπολειφθέν. Of these measures I approve of the last. For αὐτό I should read αὐτοῦ, for τὸ περίξ αὐτοῦ, τὸ ἐντὸς αὐτοῦ, as the thought, and the parallel (4 sq.), seem to require. According to Foes some MSS. omit τὸ περίξ; if this be true, it suggests that περίξ was a mistaken conjecture introduced to fill a lacuna in the text. There is no need of περίξ, since the notion occurs in the last clause, where it belongs, that is in περιῆν. The meaning is not, as Littré says, "ce qui resta de trop," but "that which surrounded it," as περιῆν stands in Thucyd., 7, 81. With regard to ὁ περὶ αὐτὸν μῆνιγξ also Ermerins is in error; we need only to read ἐγένετο <ὁ> χιτῶν ὁ περὶ αὐτὸν μῆνιγξ. Our author is merely referring back to his account of the origin of the envelopes, discussed above. In the last clause of our section also we should read <ὁ> χιτῶν, unless a better collation of the MSS. shows that χιτῶν is to be omitted altogether. The article has to be restored also in c. 4 (8, 588 L.) καὶ διὰ τοῦτο <ὁ> ἐγκέφαλος, ὅτι ὀλίγιστον ἔχει τοῦ λιπαροῦ, τοῦ δὲ κολλῶδους πλείστον, οὐ δύναται ἐκκαυθῆναι ὑπὸ τοῦ θερμοῦ, ἀλλ' ἐν τῷ χρόνῳ χιτῶνα μῆνιγγα παχείην ἔλαβε. In the last clause χιτῶνα is not to be omitted with Ermerins. Littré correctly estimated its force. I incline to think that διελύθη (8), which occurs also just before our passage, is a corruption of διεχύθη, which is more suitable to the context and is supported by διετάρχη (5) and by διαχέει and διαχεόμενον (p. 588, 10 and 16). Ermerins likewise places a full stop after κύστις (6). I

should use a colon. With this chapter compare *Περὶ διαίτης* A 9 sq. (6, 482 sq. L.).

4 (8, 588 L.) ὁ δὲ ἐγκέφαλος ἐστὶ μητρόπολις τοῦ ψυχροῦ καὶ τοῦ κολλώδεος, τὸ δὲ θερμὸν τοῦ λιπαροῦ μητρόπολις.

Ermerins saw the absurdity of this text, and sought to remedy it by reading ὁ δὲ μυελὸς τοῦ λιπαροῦ μητρόπολις. It is unlikely that the marrow, being widely distributed in the human frame, should be called a μητρόπολις; almost as unlikely as τὸ θερμὸν. But there is another consideration which deserves to be noted: we can hardly dispense with τὸ θερμὸν because τὸ θερμὸν and τὸ λιπαρόν form a natural contrast to τὸ ψυχρόν καὶ τὸ κολλώδες. It is most likely therefore that we should read τοῦ δὲ θερμοῦ <καὶ> τοῦ λιπαροῦ . . . μητρόπολις. The question then arises, which organ would our author have been most likely to regard as the μητρόπολις of heat and moisture? For, as we shall presently see, τὸ λιπαρόν is regarded by him as a product of liquefaction under the influence of heat. Once the question is so stated, the answer appears almost inevitable: the heart. We should thus have to add <ἡ καρδίη> in the lacuna before μητρόπολις, for the heart was almost universally held to be the seat of the ἐμφυτον θερμόν. In my essay *On Anaximander* (*Class. Philol.*, VII), p. 219 sq., I illustrated the cosmic and microcosmic conception of the ἀρχὴ καὶ πηγὴ, and there noted, p. 221, n. 1, the use of μητρόπολις in our passage. There can be no doubt that by μητρόπολις our author intends an ἀρχὴ καὶ πηγὴ, and by τοῦ ψυχροῦ καὶ τοῦ κολλώδεος he means chiefly the phlegm. Of the organs which ancient physiologists identify as ἀρχαὶ καὶ πηγαί of various humors (see *On Anaximander*, p. 220), our author mentions the brain (c. 3), the heart (cc. 5 and 6), the lungs (c. 7), and the liver (c. 8). This makes it clear that he had in mind the system of ἀρχαὶ καὶ πηγαί. In favor of the assumption that he meant to call the heart the μητρόπολις of the hot we may cite the following points: (a) In c. 5 he says καὶ πλείστον ἔχει τοῦ θερμοῦ ἢ καρδίη, ἢ ἡ κοίλη φλέψ, καὶ ταμεύει τὸ πνεῦμα. With regard to the πνεῦμα he says, c. 6, πνεῦμα ἢ καρδίη ἔχει θερμὴ ἐοῦσα μάλιστα τῶν ἐν τῷ ἀνθρώπῳ. From c. 6 (8, 592 L.) and c. 13 (8, 600 L.) it is clear that he regards πνεῦμα as the vapor (ἀναθυμίασις) of the blood produced by the vital heat of the heart. (b) c. 6 καὶ τὸ θερμὸν πλείστον ἐνὶ τῇσι φλεψὶ καὶ τῇ καρδίῃ and

*ibid.* τὸ δὲ παιδίον . . . ἔλκει τήν τε τροφήν καὶ τὸ πνεῦμα τῇ καρδίῃ εἴσω· τοῦτο γὰρ θερμότατον ἐστὶν ἐν τῷ παιδίῳ. It must be noted, however, that while the heart is especially concerned with τὸ θερμόν, it is not the sole seat of it: above, under (b), we have seen the veins mentioned also as the seat of the hot, and in c. 9 (8, 596 L.) he says τὸ δὲ θερμόν ἐν παντὶ τῷ σώματι. On the other hand, he says, c. 5, ἡ δὲ καρδίη πουλὴ τοῦ κολλώδεος καὶ τοῦ ψυχροῦ ἔχει. All this is calculated to confuse us, as indeed the statements proceed from the pen of one who may be a ready writer, but is not capable of expressing himself clearly. With regard to these negative instances one may take two points of view, either or both of which will probably answer the objections: First, the statement that τὸ θερμόν is in the veins and in fact in the whole body, does not imply the absence of a specific *μητρόπολις* of the θερμόν; it merely recognizes the fact, universally emphasized by the Hippocratics, that there exists a complete circulatory system by which the warm blood is carried (from the heart) to the outermost extremities and back again. In regard to his statement (c. 5) that the heart contains much of the κολλώδες and the ψυχρόν, the most probable answer seems to me, that he is speaking of the heart, not from the point of view of its physiological functioning, but from that of its original formation. The same distinction will probably be found to dispose of the liver as a possible τοῦ θερμοῦ καὶ τοῦ λιπαροῦ *μητρόπολις* because of the statement in c. 8 (8, 594 L.) τὸ δὲ ἥπαρ ὧδε ξυνέστη· ξὺν τῷ θερμῷ πουλὴ τοῦ ὑγροῦ ἀποληφθὲν ἄνευ τοῦ κολλώδεος καὶ τοῦ λιπαροῦ, ἐκράτησε τὸ ψυχρόν τοῦ θερμοῦ, καὶ ἐπάγη.

To whom our author, if he was not himself the author of it, owed the figure of the *μητρόπολις* in the sense of the ἀρχὴ καὶ πηγὴ, it is impossible to say. It seems to me not unlikely that he, or his source, influenced Plato, *Tim.* 70 A, to use the figure of the ἀκρόπολις for the head, although immediately afterwards the heart is described as a πηγὴ. On this figure of the ἀκρόπολις, see Fr. Boll, *Das Lebensalter*, p. 52, and Jaeger, *Nemesius von Emesa*, p. 21 sq. The closely related figure of the *μητρόπολις* seems to have had a similar career. Like all the various senses of ἀρχή, that of the ἀρχὴ καὶ πηγὴ in time suffered catachresis and was worn threadbare. We meet it in Diodor. Sic., 1, 2, 2 εἰ γὰρ ἡ τῶν ἐν ἄδου μυθολογία τὴν ὑπόθεσιν πεπλασμένην ἔχουσα πολλὰ συμβάλλεται τοῖς ἀνθρώποις πρὸς εὐσέβειαν καὶ δικαιοσύνην, πόσω

μᾶλλον ὑποληπτέον τὴν προφήτην τῆς ἀληθείας ἱστορίαν, τῆς ὅλης φιλοσοφίας οἰοεὶ μητρόπολιν οὔσαν, ἐπισκευάσαι δύνασθαι τὰ ἥθη μᾶλλον πρὸς καλοκάγαθίαν; Athenaeus, 104 A, in a merry mood says, εἰς ταῦτ' οὖν τις ἀποβλέπων . . . εἰκότως ἂν ἐπαυνέσειε τὸν καλὸν Χρῦσιππον, κατιδόντα ἀκριβῶς τὴν Ἐπικούρου φύσιν καὶ εἰπόντα μητρόπολιν εἶναι τῆς φιλοσοφίας αὐτοῦ τὴν Ἀγχεστράτου Γαστρολογίαν.

Having considered our author's ἀρχαὶ καὶ πηγαί in the physiological system, let us return for a moment to his cosmology in c. 2. There also he has ἀρχαὶ καὶ πηγαί, — to wit, his four χωρία, appropriated severally to (1) τὸ θερμόν ("the αἰθήρ of the ancients"), (2) γῆ, (3) ἡήρ, (4) ἡ τετάρτη (not definitely named, but doubtless water). Except in the case of (1) τὸ θερμόν, which has no other property assigned to it, each χωρίον is regarded as occupied by a pair of properties: (2) γῆ has ψυχρόν καὶ ξηρόν, (3) ἡήρ has θερμόν καὶ ὑγρόν, and (4) ἡ τετάρτη μοῖρα has ὑγρότατόν τε καὶ παχύτατον. Because of the agreement of (2) and (3) with Aristotle's description of earth and air, and the possibility if nothing more, that our author attributed not only heat but also dryness to his hot element, one might suspect that he was reproducing the doctrines of Aristotle, as Zeller, II, ii, 441, n. 2, asserted. But this would be a hasty inference. In Περὶ διαίτης A, 4 (6, 474 L.) we read, τούτων δὲ πρόσκειται ἐκατέρω τάδε· τῷ μὲν πυρὶ τὸ θερμόν καὶ ξηρόν, τῷ δὲ ὕδατι τὸ ψυχρόν καὶ ὑγρόν. Here, then, we have the other two elements described in "Aristotelian" terms, but by an author unquestionably antedating Aristotle. Zeller here, as elsewhere, displayed a profound ignorance of the Hippocratic writings, which may well be excused but must be constantly borne in mind in estimating the value of his conclusions.

Just what our author meant by saying that the τετάρτη μοῖρα, unquestionably water, was παχύτατον is a question that ought to be answered. Aristotle uses παχύς in reference to the elements in the sense of "coarse-grained," and Plato, *Tim.*, 45 C, 66 E, does likewise. But a moment's thought will show that this is not our author's meaning. His constant emphasis on the κολλῶδες and the πιαρόν suggests that he means "glutinous." Thus, c. 10 (8, 596 L.) he says, τὸ δὲ σίαλον, ὁκόσον τοῦ κολλώδους ὑγρότατον ἦν, τότε θερμαινόμενον παχύτερον ἐγένετο ὑγρόν ἐόν. The glutinative properties of water were indeed emphasized by Aristotle, *Gen. et Corr.* B 8, 335<sup>a</sup> 2 τοῦτ' εἶναι τὸ συνέχον,



and elsewhere; but Theophrastus (Diels, *Vorsokr.*<sup>3</sup>, I, 10, 21 τὸ δὲ ὕδωρ ἀρχὴ τῆς ὑγρᾶς φύσεώς ἐστι καὶ συνεκτικὸν πάντων) attributes the conception to Thales, doubtless in accordance with the interpretation of Aristotle, who must thus have recognized it as ancient. It occurs unquestionably in Empedocles, fr. 34 Diels ἀλφειτον ὕδατι κολλήσας; see also Diels on Empedocles, fr. 17, 19 and Plutarch, *De primo frig.*, 952 B.

4 (8, 588 L.) θερμαινόμενον γὰρ τὸ πρῶτον πάντων διαχέμενον λιπαρὸν γίνεται.

Ermerins, because he had changed τὸ θερμόν in the foregoing sentence to ὁ μυελός, here continued his good offices by reading θερμαινόμενος . . . διαχέμενος λιπαρός. But these changes are unnecessary and indefensible. There is one, however, in our sentence, which I regard as necessary; we must read πᾶν τὸ for πάντων.

5 (8, 590 L.) πρὸς δὲ τοῦτοις τοῖν φλεβοῖν.

In his essay *Über einen neuen Versuch, die Echtheit einiger Hippokratishen Schriften nachzuweisen* (Sitzungsb. der K. Pr. Akad., 1910), p. 1155, Diels mentions only one dual from Περὶ σαρκῶν — to wit, 17 (8, 604 L.) περὶ ταύταιν ταῖν φλεβοῖν as occurring without variant. To judge from the editions of Littré and Ermerins, there are two others, — that above quoted, and that in c. 12 (8, 598 L.) τοῖν γνάθοις, both feminine nouns with masculine modifiers. This would put Περὶ σαρκῶν almost on a par with Περὶ ἀδένων.

9 (8, 596 L.) εἰ δὲ τις τοῦτο αἰεὶ ἀφαιρεῖ, ἄλλο δέρμα γίνουτ' ἂν πρὸς τοῦ ψυχροῦ.

Ermerins is probably right in reading ἀφαιροῖ. I think we should clearly read ἄλλο <καὶ ἄλλο>, as Littré supplied <καὶ ἄλλοθι> after ἄλλοθι in c. 3 (8, 586 L.).

16 (8, 604 L.) καὶ ἐστὶ τροπὴ τῷ θερμῷ.

We should clearly read τροφή for τροπή. Cp. c. 6 (8, 592 L.) καὶ τροφὴ ἐστὶ τῷ θερμῷ τὸ ψυχρόν.

18 (8, 608 L.) ὡς ἀντηχῇ τὸ πνεῦμα . . . ὡς ἀντηχῶσι τῷ πνεύματι.

The vulg. readings ἀντέχη and ἀντέχωσι are clearly right, and we have to read ἔως ἂν instead of ὡς, as Ermerins also has seen.

19 (8, 612 L.) τὸ παιδίον ἐπτάμηνος γόνος γενόμενον, λόγῳ γεγένηται, καὶ ζῇ, καὶ λόγον ἔχει τοιοῦτον καὶ ἀριθμὸν ἀτρεκέα ἐς τὰς ἐβδομάδας.

The MSS. show ἐπτάμηνον γόνον γενόμενον. Litttré, I think, erred in changing the gender of ἐπτάμηνον, although one must clearly write γόνος instead of γόνον; for the words mean "the seven-months foetus brought to the birth." There is a certain resemblance between this locution and γενόμενον θεραπείην, Περὶ καρδίης, 3 (9, 82 L.), for which see below, p. 188.

The use of λόγος here is interesting, as it clearly means a law statable in mathematical terms. The same expression recurs later, p. 614 καὶ ἐν ἐπτά ἔτεσιν ἔστι δὲ λόγῳ καὶ ἀριθμῷ ἀτρεκέως δεκάδες ἐβδομάδων . . . τῆς δὲ φύσιος τὴν ἀνάγκην, διότι ἐν ἐπτά τουτέων ἕκαστα διοικεῖται, ἐγὼ φράσω ἐν ἄλλοις. In this latter passage our author distinguishes between the mathematical law and the physical cause which brings events about in accordance with it. The same conception of λόγος is involved in Heraclitus, fr. 31 Diels, to whom our author may be indebted for it. But the physical experiments of the Pythagoreans, for example in connection with the relation of the notes composing an octave, necessarily involved it likewise. See Milhaud, *Les philosophes géomètres de la Grèce*, and Diels, *Wissenschaft und Technik bei den Hellenen (Neue Jahrbücher, 1914)*, pp. 6 and 11.

#### ΠΟΡΡΗΤΙΚΟΝ Β

3 (9, 12 L.) ἀλλ' ὅμως πρόσθεν ἦν μὴ τὰ ἥθεα τῶν νοσημάτων τε καὶ τῶν ἀλγεόντων ἐκμάθη ὁ ἱητρός, οὐ χρή προλέγειν οὐδέν.

I think it is probable that we should read πρόσθεν ἢ [μὴ]. Cf. Περὶ εὐσχημοσύνης, 4 (9, 230 L.) πρόσθε μὲν ἢ διδαχθῇ, where Ermerins wrongly reads διδαχθῆναι; for Soph., *El.* 82, sufficiently proves the construction.

12 (9, 32 L.) τὰ τε γὰρ χωρία ὀνόματα ἔχοντα ταῦτά μέγα διαφέρει, καὶ οἱ οὗτοι τρόποι.

It seems obvious that we should read τόποι for τρόποι. The author means to say that different parts of the body may be called by the same name and may yet require different treatment, and diseases affecting them may take a different course. Thus finger and toe

(see c. 11, *sub finem*) bear the common name δάκτυλος, but an affection of the latter is attended with greater danger. In like manner diseases affecting the same part will differ both in different individuals differently constituted and in the same individual at different times; for, as our author proceeds to say, the condition of the same individual varies: at one time even a wound will cause no inflammation, at another time inflammation will set in without external provocation.

### ΠΕΡΙ ΚΑΡΔΙΗΣ

3 (9, 82 L.) τὸν μὲν οὖν ἡέρα χρή, γενόμενον θεραπείην, ἀνάγκη ὀπίσω τὴν αὐτὴν ὁδὸν ἐκβάλλειν ἔνθεν ἡγαγεν· τὸ δὲ ὑγρόν, τὸ μὲν εἰς τὸν κοιλεὸν αὐτέης ἀποπτύει, τὸ δ' αὖ ξὺν τῷ ἡέρι θύραζε χωρέειν ἐῖ. ταύτη καὶ διαίρει τὸν οὐρανόν, ὁκόταν παλινδρομέη τὸ πνεῦμα· παλινδρομέει δὲ κατὰ δίκην· οὐ γὰρ ἔστιν ἀνθρώπου φύσις τροφὴ ταῦτα· κῶς γὰρ ἀνθρώπου τροφὴ ἄνεμος καὶ ὕδωρ τὰ ὡμά; ἀλλὰ μᾶλλον τιμωρίη ξυγγενέος πάθης.

Ermerins saw that χρή and ἀνάγκη (*i. e.*, ἀνάγκη) were variants, and he therefore omitted the former. The use of θεραπείην here is similar to that of ἔλξιν in Περὶ ἀδένων, 7 (8, 562 L.) noted above, p. 177. Both words point to a later date. The doctrine expressed in the clause κῶς γὰρ ἀνθρώπου τροφὴ ἄνεμος καὶ ὕδωρ τὰ ὡμά; is not that of the Hippocratic writings, which regard breath as a form of τροφή: see my *Antecedents of Greek Corpuscular Theories*, p. 132 sq. In saying τὰ ὡμά our author obviously implies that ἄνεμος and ὕδωρ require πέψις preparatory to serving as τροφή. I will not say more about this now, because it is clear that the treatise Περὶ καρδίας belongs to the fourth century or later. For a sketch of Greek theories of digestion see my essay just cited, p. 143 sq. An interesting, but far from exhaustive study of the treatise Περὶ καρδίας is contained in Wellmann's *Fragmentsammlung der griechischen Ärzte*, I, ch. III, p. 94 sq.

Our passage possesses great interest for another reason. Who can read the words παλινδρομέει δὲ κατὰ δίκην . . . τιμωρίη ξυγγενέος πάθης and compare with them the passage in which Theophrastus states the fundamental doctrine of Anaximander (*Vorsokr.*<sup>3</sup>, I, 15, 26 sq.) ἐξ ὧν δὲ ἡ γένεσις ἔστι τοῖς οὐσι, καὶ τὴν φθορὰν εἰς ταῦτα γίνεσθαι κατὰ τὸ χρεών·

διδόναι γὰρ αὐτὰ δίκην καὶ τίσιν ἀλλήλοις τῆς ἀδικίας κατὰ τὴν τοῦ χρόνου τάξιν, without seeing at once the similarity, not to say the identity, of the conception and the point of view? I have repeatedly discussed the latter passage, and have, I think, conclusively shown that the traditional interpretation is false. Anaximander had in mind, not the periodic reabsorption of individual things in the Infinite, regarded as a metaphysical entity, but the seasonal alternation of the hot and the cold, — the hot (and the dry?) prevailing in summer, the cold (and the moist?) in winter. See *On Anaximander* (*Class. Philol.* VII), p. 233 sq., and *On Certain Fragments of the Pre-Socratics* (*Proceedings of the American Academy of Arts and Sciences*, XLVIII), p. 684 sq. In our present passage we find a complete parallel in the microcosm to Anaximander's cosmic process. In Anaximander and in the author *Περὶ καρδίας* there is the same rectification, equalization, or compensation (*ἀνίσωσις*) of a disturbed balance. In Anaximander the cold of the winter avenges the heat of summer, as in *Περὶ καρδίας* the cold of the inhaled air avenges the ἔμφυτον θερμόν of the heart. The same thought recurs in the discussion of the lungs, c. 5 (9, 84 L.) *περίβολον δὲ ἔχει παχύν, καὶ βόθρον ἐμβεβόθρωται τὸ εἶδος εἶκελον ὄλμψ. ἀλλὰ γὰρ ἤδη καὶ τοῦ πνεύμονος <τὸ ἔνδυτον?> ἐνδύεται μετὰ προσηνίης, καὶ κολάζει τὴν ἀκρασίην τοῦ θερμοῦ περιβαλλομένη· ὁ γὰρ πνεύμων φύσει ψυχρός· ἀτὰρ καὶ ψυχόμενος τῇ εἰσπνοῇ.* Another good parallel occurs in the closely related treatise *Περὶ ἀδένων*, 10 (8, 564 L.) *τὴν κεφαλὴν <ὕγρην> ἑοῦσαν, διὰ τὰ εἰρημένα μοι, τιμωρέων ὁ ἐγκέφαλος ἀποστερεῖ τὴν ὑγρασίην κτλ.* For this passage, see above, p. 178.

## ΠΕΡΙ ΤΡΟΦΗΣ

2 (9, 98 L.) αὖξει δὲ καὶ ῥώννυσσι καὶ σαρκοῖ καὶ ὁμοιοῖ καὶ ἀνομοιοῖ τὰ ἐν ἐκάστοισι κατὰ φύσιν τὴν ἐκάστου τὴν ἐξ ἀρχῆς δύναμιν. 3 ὁμοιοῖ δὲ ἐς <φύσιν καὶ> δύναμιν, ὁκόταν κρατέῃ μὲν ἡ ἐπεισιούσα, ἐπικρατέῃ δὲ ἡ προὔπαρχουσα.

Ermerins accepts Littré's addition <φύσιν καὶ>, and rightly reads ἐπικρατέτῃ in c. 3.

The interpretation of the text, here as elsewhere in *Περὶ τροφῆς*, is beset with much difficulty, which is in no way lessened by the existence of a voluminous commentary purporting to belong to Galen

(XV, 224 sq., Kühn). I had myself reached the conclusion that it was not genuine when I learned that Nelson had convinced himself of the fact, and that in consequence the Commentary was not to be included among the works of Galen in the new *Corpus Medicorum*. Galen himself displays scant historical intelligence, but the author of the Commentary on *Περὶ τροφῆς* is as wholly wanting in it as in the first rudiments of philological exegesis. Touching our passage we read (XV, 233 K) ἡ μὲν οὖν φύσις ὁμοιοῖ, ὅταν κρατῇ καὶ πέττη τὴν τροφήν τὴν ἐπεισιούσαν· καὶ δύναμις ἡ προϋπάρχουσα ἐπικρατεῖ καὶ κατεργάζεται καὶ ἄλλοιοῖ καὶ ὁμοιοῖ καὶ τὸ τέλος τρέφει. It is incredible that we should have to supply several different subjects in the short sentence. The subject is doubtless *τροφή* throughout. By *ὁμοιοῖ* our author probably means, not assimilation, as Pseudo-Galen thinks, but the maintenance of the *status quo ante*. Perhaps by *ἀνομοιοῖ* he means to change that status; but I suspect that he means *to restore the status quo ante*, deriving the verb from *ἀνά* + *ὁμοιοῦν*. We should thus have a complete parallel to *ἀνισοῦν*, which, though *ἄνισος* like *ἀνόμιος* occurs, is derived not from *ἄνισος*, but from *ἀνά* + *ισοῦν*. This suggestion is the more probable because in Ionic *ῖσος* and *ὅμοιος* are often coupled or used interchangeably. In c. 2 Littré understands τὴν ἐξ ἀρχῆς δύναμιν as referring to the δύναμις *θεραπευτική*, as Pseudo-Galen takes it. This, I believe, is an error: δύναμις here and generally in *Περὶ τροφῆς*, refers to the original properties of the food. Two things have an influence on the effect of food ingested into the system,—the constitution of the subject and the properties of the nutrient. In c. 3 I take ἐς δύναμιν to mean “to the extent of its power,” and therefore reject Littré’s <φύσιν καὶ>.

5 (9, 100 L.) ἀμαυροῖ δὲ ἑκατέρας ἐν χρόνῳ καὶ μετὰ χρόνον ἡ ἔξωθεν συνεχῆς ἐπεισκριθεῖσα καὶ ἐπὶ πολλὸν χρόνον στερεμνίως πᾶσι τοῖσι μέλεσι διαπλεκείσα. 6. καὶ τὴν μὲν ἰδίην ἐξεβλάστησε· μεταβάλλει τε τὴν ἀρχαίαν, καὶ καταφέρεται· τρέφει δὲ πεπτομένη· τὴν δὲ προτέραν ἰδέην ἐξαλλάττει ἔστιν ὅτε καὶ τὰς προτέρας ἐξημαύρωσεν.

In c. 5 ἐν χρόνῳ and μετὰ χρόνον are probably variants, and I should omit καὶ μετὰ χρόνον. Pseudo-Galen has συνεχῶς, and I think it most probably the correct reading. Ermerins runs cc. 5 and 6 together omitting the period after διαπλεκείσα and the following καὶ. Our MSS. omit

μεταβάλλει τε . . . πεπτομένη and ιδέην εξαλλάττει, in both cases rightly. Littré has borrowed these additions from Pseudo-Galen. They belong to the same school as the Commentary, and reveal the influence of Aristotle's doctrine of πέψις. The form in which Aristotle received the doctrine of τροφή from the medical tradition, and the superficial alterations he made in it, in order to make it square with his metaphysical views, may be clearly seen by the discerning in *Gen. et Corr.* B 8. Omitting ιδέην εξαλλάττει, the last clause becomes clear and intelligible; for τὴν προτέραν (sc. τροφήν) and τὰς προτέρας (sc. τροφὰς) refer to portions of food ingested on previous days, and the thought is brought into close parallelism with that of c.5. The presence of these false additions to the text found in the Commentaries constitutes an interesting problem. Galen several times charges older commentators with making unwarranted additions to the text. Perhaps they originated in paraphrase and commentary, which a later commentator mistook for a fuller text. All additions not supported by our best MSS. are suspicious, and not improbably some have found their way even into these.

12 (9, 102 L.) καὶ πάντων ἐς θερμασίην βλάπτει καὶ ὠφελεῖ· ἐς ψύξιν βλάπτει καὶ ὠφελεῖ· ἐς δύναμιν βλάπτει καὶ ὠφελεῖ.

In this passage καὶ πάντων has been variously construed and interpreted. Kühn attaches the words to the foregoing sentence, which is indefensible; Littré construes πάντων with θερμασίην, which is hardly better; Diels makes it depend on τροφή; and Ermerins says, "locus incertae lectionis." To me it seems most probable and most consonant with the style of the treatise, that we should read κατὰ πάντων and point with a colon after it; for I take the author to mean that the following statements apply to all food-stuffs. We should thus have an emphatic formulation of the author's doctrine of relativity: the action of foods depends wholly on the φύσις of the individual and on the καιρός.

23 (9, 106 L.) σύρροια μία, σύμπνοια μία, πάντα συμπαθέα· κατὰ μὲν οὐλομελίην πάντα, κατὰ μέρος δὲ τὰ ἐν ἑκάστῳ μέρει μέρεα πρὸς τὸ ἔργον.

This is the text of Diels, *Vorsohr.*<sup>3</sup>, I, 112, 7. Just what meaning he attaches to the words I cannot divine. The renderings of Littré,

Ermerins, and Fuchs are unsatisfactory. At the risk of going wrong, I will give my own interpretation. The author is here, I think, as elsewhere in this treatise (cp. cc. 1, 9, 17, 24), concerned with the moot question of the One and the Many. In c. 9 he saw in the unity of the vascular system, with its various ἀρχαὶ καὶ πηγαί, the answer to the problem in its bearing on physiology: One and Many are merely relative terms. This solution he here repeats in a different form, substituting the terms Whole and Part for One and Many. The vascular system (σύρροια), he says, is One; the respiratory system (σύμπνοια) is One. Though he does not elaborate it, he obviously holds the Hippocratic doctrine, according to which these two systems, as is shown by their coöperation in regulating the ἔμφυτον θερμόν, are One. All is one sympathetic system, in which everything that affects any part, affects the whole (πάντα συμπαθέα). Viewed in their totality the parts constitute a Whole: viewed piecemeal, that which is in the several organs, is Part: the terms Whole and Part are relative to function. The same conclusion is reached by the author of Περὶ διαίτης A, 15 (6, 490 L.) ἐκ τῶν ὅλων μέρος διαιρεῖται καὶ ἐκ τῶν μερῶν συντιθεμένων ὅλα γίνονται. If this interpretation is correct, we should set off πρὸς τὸ ἔργον by pointing with a colon after μέρος. With cc. 23 and 28 compare [Arist.,] *Probl.*, A, 52, 865<sup>b</sup> 18–37.

32 (9, 110 L.) δύναμις μίη καὶ οὐ μίη, ἣ πάντα ταῦτα καὶ τὰ ἑτεροῖα διοικέεται, ἣ μὲν ἐς ζῶην ὅλου καὶ μέρος, ἣ δὲ ἐς αἴσθησιν ὅλου καὶ μέρος.

Nobody will defend μίη. But there is matter of greater importance here. Our best MS., A, omits ἣ μὲν to the final μέρος, — presumably an addition made, like the additions in c. 12, by some one under the influence of Aristotelian-Stoic conceptions; for δύναμις here means not “*faculté*,” as Littré renders it after Pseudo-Galen, but “*quality*” (of food). Whoever made the false addition, which is by way of interpretation, was doubtless misled by the term διοικέεται, which here, as in c. 10, refers to the physiological “*economy*” of nutrition. We should then obviously read ἣ πάντα ταῦτα καὶ [τὰ] ἑτεροῖα διοικέεται, unless we are to read διακέεται, “*are disposed*” for διοικέεται.

37 (9, 110 L.) περίοδοι ἐς πολλὰ σύμφωνοι, ἐς ἔμβρυον καὶ ἐς τὴν τούτου τροφήν· αὐτὶς δὲ ἄνω ῥέπει ἐς γάλα καὶ ἐς τροφήν βρέφους.

It is a commonplace among the Hippocratics that menstruation is allied to lactation, e. g. Ἐπιδημιῶν B 17 (5, 118 L.) διὸ τὰ γάλακτα ἀδελφὰ τῶν ἐπιμηνίων. Περὶ φύσιος παιδίου, 30 (7, 536 L.) ὥς ἐπὶ τὸ πλείστον συμβαίνει καὶ ἀγαλάκτους μᾶλλον εἶναι ταύτας τὰς γυναῖκας, τὰς ὀλίγα τὰ καταμήνια μεθίειςας. Littré and Fuchs, like earlier translators, have missed the meaning of σύμφωνοι, which (cp. c. 40) is roughly equivalent to συμφέρουσαι, or to ἀδελφαί, as in the first parallel above cited. For the general thought of our passage compare Περὶ φύσιος παιδίου, 30 (7, 534 L.) <δι>ὅτι δ' οὐκ ἔστι χρονιώτερον δέκα μηνῶν ἐν γαστρὶ ἔχειν ἐγὼ φράσω · ἡ τροφή καὶ ἡ αὔξησις ἡ ἀπὸ τῆς μητρὸς κατιούσα οὐκέτι ἀρκεύουσα τῷ παιδίῳ ἐστὶ κτλ. In accordance with this interpretation I should write our passage thus: περίοδοι ἐς πολλὰ σύμφωνοι · ἐς ἔμβρυον κάτεισι (sc. τὰ καταμήνια) καὶ ἐς τὴν τούτου τροφήν, αὗτις δὲ ἄνω ῥέπει ἐς γάλα καὶ ἐς τροφήν βρέφους.

51 (9, 118 L.) μῆνες στερεώτεροι δύστηκτοι <μᾶλλον> τῶν ἄλλων, παρέξ ὁστέου καὶ νεύρον.

Littré added μᾶλλον, in which he was followed by Ermerins. It seems clearly more probable that δύστηκτοι (or whatever form we here accept) is a gloss on στερεώτεροι, suggested by the close of the paragraph. With the excision of δύστηκτοι the need of μᾶλλον disappears. Only the ease of accounting for the loss of μᾶλλον could have recommended Littré's procedure.

#### ΠΕΡΙ ΟΨΙΟΣ

1 (9, 152 L.) αἱ ὄψεις αἱ διεφθαρμέναι, αὐτόματοι μὲν κυανίτιδες γιγνόμεναι, ἐξαπίνης γίνονται, καὶ ἐπειδὰν γένωνται, οὐκ ἔστιν ἦσις τοιαύτη.

It seems clear that we should read τοιαύτησιν for τοιαύτη, the ending having been lost before the following αἱ δὲ.

#### ΠΕΡΙ ΙΗΤΡΟΤ

2 (9, 206 L.) τοὺς δὲ δίφρους ὁμαλοὺς εἶναι τοῖς ὕψεσι ὅτι μάλιστα, ὅπως κατ' αὐτοὺς ὦσιν.

This passage has taxed the intelligence of editors and translators. Littré renders: "Les sièges, autant que possible, seront de hauteur égale, afin que le médecin et le patient soient de niveau." Fuchs:



“Die Stühle seien an Höhe einander möglichst gleich, damit sie der Körperform der Patienten entsprechen.” In a note he adds: “Freilich kann *δίφρος* auch das *scamnum aegrotorum*, d. h. eine Krankenpritsche, bezeichnen.” Littré’s rendering is intelligible, but vague; whether the plural *κατ’ αὐτοὺς* led him to refer to the surgeon and the patient is not clear. One cannot refrain from smiling as one reads Fuchs’ translation. Ermerins was troubled by the plural *κατ’ αὐτοὺς*: had it been the singular, he says, he would have referred it unhesitatingly to the physician. Even so he asks whether that may not be the author’s meaning. I think it is, without a doubt. There is no reason why, in such general instructions, a plural should not occur even if a singular would have been appropriate. All but Fuchs appear to think only of chairs; but *δίφρος* has so many meanings that I do not hesitate to interpret it here as referring to the ancient equivalent, whatever that was, of the modern operating table. In considering the meaning of such a passage we must not forget the close similarity of *Περὶ ἰητροῦ τοῦ Κατ’ ἰητροῦ*, to which probably it is much indebted. In the latter work we read c. 3 (3, 278 L.) ὁ δρῶν, ἢ καθήμενος, ἢ ἐστῶς, ξυμμέτρως πρὸς ἑωυτόν, πρὸς τὸ χειριζόμενον, πρὸς τὴν αἰγὴν. Similarly in the description of the ‘bench of Hippocrates,’ *Περὶ ἄρθρων*, 72 (4, 296 L.) occurs the suggestion ὡς μὴ ὑψηλοτέρῃ τοῦ καιροῦ ἢ μηχανήσῃς ἔη. As we nowhere read of an adjustable mechanism it is obviously supposed that the tables will be specially constructed of a height to suit the practitioner who is to use them, and where several are to be used by the same physician they will of course be approximately of an even height.

4 (9, 208 L.) ἔστι δὲ οἰκείη ἐπίδεσις τῆς ἰητρικῆς, ἀφ’ ἧς ὠφελεῖσθαι τὸν θεραπευόμενον <δεῖ>.

Littré added <δεῖ>, which Ermerins rightly pronounces inept, and admitted *θεραπευόμενον* (Foes) for *θεραπεύοντα* of the MSS. With my present knowledge of the MS. tradition, I can suggest nothing better than ἀφ’ ἧς ὠφελεῖν ἔστι τὸν θεραπεύοντα, the clause offering the justification for the statement of the preceding. The meaning of the first clause has been strangely misconceived; for τῆς ἰητρικῆς depends on οἰκείη (Kühner-Gerth, I, 376, 4). “Bandaging,” says our author, “is a theme germane to the art of medicine, seeing that the practitioner is able thereby to afford relief.”

13 (9, 218 L.) περί δὲ καιρῶν, ὁκότε τούτοις ἐκάστοις χρηστέον ἐστί, καὶ τὰς δυνάμεις ὡς χρῆ τῶν γεγραμμένων καταμανθάνειν, παραλέλειπται δὲ τὰ τοιαῦτα, ἐπεὶ πλεῖον προῆκται τῆς κατ' ἱητρικὴν ἐπιμελείας καὶ πόρρω τοῦ τῆς τέχνης ἤδη προεληλυθότος ἐστίν.

Littré took the second δέ as equivalent to δῆ. I should prefer to read δῆ outright. Ermerins, besides other gratuitous changes, places τοῦ before, instead of after, πόρρω. I believe we need only to change τοῦ to που; cp. Plato, *Enthyphro*, 4 A οὐ γὰρ οἶμαι γε τοῦ ἐπιτυχόντος ὁρθῶς αὐτὸ πρᾶξαι, ἀλλὰ πόρρω που ἤδη σοφίας ἐλαύνοντος.

### ΠΕΡΙ ΕΤΣΧΗΜΟΣΤΝΗΣ

2 (9, 226 L.) πᾶσαι γὰρ αἱ μὴ μετ' αἰσχροκερδείης καὶ ἀσχημοσύνης καλαί, ἧσι μέθοδος τις ἐοῦσα τεχνικὴ ἐργάζεται· ἀλλ' εἴ γε μὴ, μὴ πρὸς ἀναιτίην δημευταί. νέοι τε γὰρ αὐτέοισιν ἐμπίπτουσιν. ἀκμάζοντες δὲ δι' ἐντροπίην ἰδρώτας τίθενται βλέποντες· πρεσβῦται δὲ διὰ πικρίην νομοθεσίην τίθενται ἀναίρεσιν ἐκ τῶν πόλεων. καὶ γὰρ ἀγορὴν ἐργαζόμενοι, οὗτοι μετὰ βαναυσίης ἀπατέοντες, καὶ ἐν πόλεσιν ἀνακυκλέοντες οἱ αὐτοί.

The MS. tradition here, as elsewhere in this treatise, is wretched. Littré supplied the second μὴ in the second sentence, and read δημευταί for δημευταί. In the last sentence he substituted οὗτοι for οὔτοι, and preferred ἀπατέοντες to the variant ἀπαιτέοντες. Ermerins adds <ἐν> before ἧσι, rejects Littré's μὴ, reads ἀναίδειαν δημεύονται for ἀναιτίην δημευταί, αὐτῆσιν for αὐτέοισι, and rejects Littré's οὗτοι, restoring οὔτοι. It is of course impossible to say what the author wrote. Perhaps the following text may be helpful to others as the best I can now offer: πᾶσαι γὰρ αἱ μὴ μετ' αἰσχροκερδείης καὶ ἀσχημοσύνης καλαί, ἧσι μέθοδος τις ἐοῦσα τεχνικὴ ἐργασίη καλὴ ἐστίν. ἀλλ' εἴ γε μὴ, πρὸς ἀναιδείην δημευταί. νέοι τε γὰρ αὐτοὶ αὐτῆσιν ἐμπίπτουσιν· ἀκμάζοντες δὲ διεντροπίην χρωτὸς τίθενται βλέποντες· πρεσβῦται δὲ διὰ πικρίην νομοθεσίην τίθενται ἀναίρεσιν ἐκ τῶν πόλεων. οἱ γὰρ ἐν ἀγορῇ ἐργαζόμενοι οὗτοι καὶ μετὰ βαναυσίης ἀπαιτέοντες (sc. μισθόν), καὶ οἱ ἐν πόλεσιν ἀνακυκλέοντες, οἱ αὐτοί.

A few notes on this text may be in order. It is neither necessary nor desirable to justify all the suggestions contained in the proposed changes. It would seem not unnatural that the author had some-

how characterized νέοι, and we might have expected something like νέοι τε γὰρ ἄνοι ἔόντες αὐτοὶ αὐτῆσιν ἐμπίπτουσιν; but in so sketchy and ill-written or ill-preserved a treatise no one can feel any confidence that the author said what he appears to have had in mind. It will be noted that I propose διεντροπίνην (or διεντροπήν) χρωτὸς for δι' ἐντροπίνην ἰδρῶτας. This change appears to me fairly self-evident. Two obvious corruptions occur in the same sentence due at least in part to a misapprehension of the common periphrasis of a verbal noun with τίθεσθαι. The separation of διεντροπίνην into two words was probably due to the influence of διὰ πικρίην. Between διεντροπίνην and διεντροπήν, both being possible, I cannot make a final choice. The phrase is a periphrasis for χρῶς τρέπεται as νομοθεσίη (for νομοθεσίην) τίθενται ἀναίρεσιν is for νόμφ (or νομοθεσίη) ἀναιροῦσι. In this passage one is involuntarily reminded of Plato, *Apol.*, 34 A B. The last sentence is well nigh desperate. The suggestions aim to give a possible rather than a probable reconstruction. I propose ἐν ἀγορῇ ἐργαζόμενοι, "plying their trade in the agora," instead of ἀγορὴν ἐ., as in Demosth., LVII, 31, and take <καὶ> μετὰ βανανσίης ἀπαιτούντες, "vulgarly exacting pay," with it, as completing the description of the quacks; and supply <οἱ> in the next clause, thinking it probable that our author means to identify the said quacks with the journeymen who, like the better known sophists, went from city to city in quest of dupes. Such quacks were distinguishable from great physicians like Democedes only by their methods and results; for the best physicians appear in the earlier days to have travelled widely in the practice of their profession. The Ἐπιδημῖαι in the *Corpus Hippocrateum* are "notes of foreign travel" made in the course of such journeys, and have no especial reference to epidemic diseases. The most successful among these journeymen received appointments as state physicians.

4 (9, 230 L.) ἡγεμονικώτατον μὲν οὖν τουτέων ἀπάντων τῶν προειρημένων ἢ φύσις· καὶ γὰρ οἱ ἐν τέχναισιν, ἣν προσῆ αὐτέοισι τοῦτο, διὰ πάντων τουτέων πεπόρευνται τῶν προειρημένων. ἀδίδακτον γὰρ τὸ χρέος ἐν τε τῇ σοφίᾳ καὶ ἐν τῇ τέχνῃ· πρόσθε μὲν ἢ διδαχθῇ, ἐς τὸ ἀρχὴν λαβεῖν ἢ φύσις κατερρῆ καὶ κέχυται, ἢ δὲ σοφίᾳ ἐς τὸ εἰδῆσαι τὰ ἀπ' αὐτῆς τῆς φύσεως ποιούμενα. καὶ γὰρ ἐν ἀμφοτέροισι τοῖσι λόγοισι

πολλοὶ κρατηθέντες οὐδαμῇ συναμφοτέροισιν ἐχρήσαντο τοῖσι πρήγμασι ἐς δεῖξιν· ἐπὴν οὖν τις αὐτέων ἐξετάζη τι πρὸς ἀληθείην τῶν ἐν ῥήσει τιθεμένων, οὐδαμῇ τὰ πρὸς φύσιν αὐτέοισι χωρήσει. εὐρίσκονται γοῦν οὗτοι παραπλησίην ὁδὸν ἐκείνοισι πεπορευμένοι. διόπερ ἀπογυμνούμενοι τὴν πᾶσαν ἀμφιέννυνται κακίην καὶ ἀτιμίην. καλὸν γὰρ ἐκ τοῦ διδασκέντος ἔργου λόγος· πᾶν γὰρ τὸ ποιηθὲν τεχνικῶς ἐκ λόγου ἀνηνέχθη· τὸ δὲ ῥηθὲν τεχνικῶς, μὴ ποιηθὲν δέ, μεθόδου ἀτέχνου δεικτικὸν ἐγενήθη· τὸ γὰρ οἶεσθαι μὲν, μὴ πρήσσειν δέ, ἀμαθίης καὶ ἀτεχνίης σημείον ἐστίν· οἷσις γὰρ μάλιστα ἐν ἱητρικῇ αἰτίην μὲν τοῖσι κεχρημένοισιν, ὅλεθρον δὲ τοῖσι χρεομένοισιν ἐπιφέρει· καὶ γὰρ ἦν ἐωυτοὺς ἐν λόγοις πείσαντες οἰηθῶσιν εἰδέναι ἔργον τὸ ἐκ μαθήσιος, καθάπερ χρυσὸς φαῦλος ἐν πυρὶ κριθεὶς τοιούτους αὐτοὺς ἀπέδειξεν. καὶ τοι γε τοιαύτη ἡ πρόρρησις ἀπαρηγόρητος. ἡ σύνεσις ὁμογενής ἐστίν, εὐθὺ τὸ πέρας ἐδήλωσε γνῶσις· τῶν δ' ὁ χρόνος τὴν τέχνην εὐοδέα κατέστησεν, ἡ τοῖσι ἐς τὴν παραπλησίην οἶμον ἐμπύπτουσι τὰς ἀφορμὰς δήλους ἐποίησε.

Ermerins did not greatly modify this text, except that he declined to reconstruct the last sentence, beginning with καίτοι γε, which he gave in the vulg. because he could make nothing of it. I note the principal changes. 4: διδασκῆναι. 7: ἐν ἀμφοτέροις. 8: ἐς ἐνδείξιν. 10: οἶμον for ὁδόν. 15: κεκτημένοις, with Corais, for κεχρημένοις.

The text is undoubtedly corrupt, and Littré found its sense obscure. His résumé is wholly misleading, and his rendering, followed in the main by Fuchs, is impossible. Ilberg, *Studia Pseudhippocratea*, p. 58 sq., confessed that it was difficult, and quite missed its meaning. Ermerins caught at least the general drift of the chapter. Parts of the text are desperate, and here and there I cannot follow the author; but the main outlines of his thought are intelligible, once one seizes the clew. The chapter deals with the problem of education and scientific practice. If one desires to understand it, I know of nothing better calculated to give the necessary historical setting of ideas than the admirable article by Professor Shorey, *Φύσις, Μελέτη, Ἐπιστήμη*, in the *Transactions of the Amer. Philol. Assn.*, XL (1909), pp. 185-201. Unfortunately Professor Shorey, like others who have dealt with the general theme, appears not to have known our chapter, or, misled by Littré's summary, to have passed it by without recognizing its contents.

Our author begins by emphasizing the fundamental importance of φύσις, — meaning natural aptitude, — for the study of medicine. This requirement is dwelt upon also Νόμος, 2 (4, 638 L.) *πρῶτον μὲν οὖν πάντων δεῖ φύσις· φύσις γὰρ ἀντιπρησσοῦσης, κενὰ πάντα· φύσις δὲ ἐς τὸ ἄριστον ὁδηγεούσης, διδασκαλὴ τέχνης γίνεται.* This aptitude is inborn, not bred by education: *ἀδίδακτον γὰρ τὸ χρεός (= τὸ χρῆμα, i. e. ἡ φύσις) ἔν τε τῇ σοφίῃ (= φιλοσοφίᾳ) καὶ ἐν τῇ τέχνῃ.* Cp. *Περὶ τροφῆς*, 39 (9, 112 L.) *φύσις πάντων ἀδίδακτοι.* Because of the aphoristic style and a certain incoherence of thought, it is impossible to say just what φύσις in the latter passage means. Clearly we are, however, dealing with a catchword of the time which, like others of the sort, was susceptible of different applications. By the close of the fifth century, as I have elsewhere shown, φύσις, beginning to be distinctly personified, had come to be charged with a great wealth of meaning. The author of *Περὶ τροφῆς* may have had in mind rather the varying physical constitutions of men, which, independently of training, education, or volition, perform their natural functions. Cp. also Epicharmus (?), fr. 4, 6 Diels

*τὸ δὲ σοφὸν ἂ φύσις τόδ' οἶδεν ὥς ἔχει  
μόνα· πεπαίδενται γὰρ αὐτὰντ' ὅπο,*

and *Περὶ διαίτης* A, 15 (6, 490 L.) *ἡ φύσις αὐτομάτῃ ταῦτ' ἐπίσταται.* Our author proceeds to say that without instruction natural endowment is too lax and undisciplined to make a beginning: *πρόσθε μὲν ἡ διδαχθῇ, ἐς τὸ ἀρχὴν λαβεῖν ἡ φύσις κατεργήη καὶ κέχνηται;* (possibly we should read *τέχνην λαβεῖν*, “acquire an art,” instead of *ἀρχὴν λαβεῖν*). Whereas understanding, bred of instruction, is equally incapable of really knowing what untaught nature does of itself: *ἡ δὲ σοφίη ἐς τὸ εἰδῆσαι τὰ ἀπ' αὐτῆς τῆς φύσις ποιούμενα.* Here the MSS. show *τῇ δὲ σοφίῃ.* One is tempted to read *τῇ δὲ σοφίῃ ἔστιν εἰδῆσαι*, “but philosophical instruction is capable of comprehending scientifically what nature does instinctively.” This would be an easy emendation, as *ἔστιν* might readily have been changed to *ἐς τὸ* because of the preceding *ἐς τὸ*, and the sentence would gain immensely by the change; but the following sentence appears to presuppose Littré's text, which Ermerins also adopts. The next sentence has been obscured by the intrusion of *ἀμφοτέροισι*, probably a misplaced variant for *συναμφοτέροισιν*;

and one is puzzled to know what to do with ἐς δειξιν. There is a variant ἐνδειξιν, which Ermerins has combined with the other into ἐς ἐνδειξιν. I suspect that our author wrote ἐν δειξεσιν, which was corrupted into ἐν δειξιν, whence the variants. Many, our author says, have been worsted in argument because they have not used, or had at their service, in their epideictic discourses (or prognostications? cp. πρόρρησις, below), both these necessary qualifications,—to wit, natural endowment and scientific instruction. This appears to be the author's meaning, though the sentence, even with the suggested changes, is not well constructed: καὶ γὰρ ἐν [ἀμφοτέροισι] τοῖσι λόγοισι πολλοὶ κρατηθέντες οὐδαμῇ συναμφοτέροισιν ἐχρήσαντο τοῖσι πρήγμασι ἐν δειξεσιν. While it is clearly hinted that the physician must possess both qualifications, our author has for the moment uppermost in his thought the need of scientific (theoretical) training as of first importance in disputations. In reading this passage one naturally thinks of the reference to such debates in Περὶ φύσιος ἀνθρώπου, I (6, 32 sq. L.). Our author proceeds: Consequently, when one examines any one of their statements in the light of theory, their native talent is of no avail: ἐπὴν οὖν τις αὐτέων ἐξετάσῃ τι πρὸς ἀληθείην τῶν ἐν ῥήσει τιθεμένων, οὐδαμῇ τὰ πρὸς φύσιν αὐτέοις χωρήσει. One will note here the use of πρὸς ἀληθείην, which I have rendered "in the light of theory." I think there can be no doubt as to its meaning; for our author obviously refers to the test of truth which comes by the application of doctrine regarded as a rational system of relations. Aristotle, *Eth. Nic.*, X, 9, 1179<sup>b</sup> 23 similarly speaks of ὁ λόγος καὶ ἡ διδαχή, and the author of Παραγελίαι, who is probably to be identified with the author of our treatise, says c. I (9, 252 L.) ὑποληπτέον οὖν τὴν φύσιν (by which, unless we are to read τὴν αἴσθησιν, he probably means man's native powers, including his senses) ὑπὸ τῶν πολλῶν καὶ παντοίων πρηγμάτων κινήσθαι τε καὶ διδασθῆναι, βίης ὑπεούσης· ἡ δὲ διάνοια παρ' αὐτῆς λαβοῦσα, ὡς προείπον, ὕστερον εἰς ἀληθείην ἤγαγεν. Here again ἀληθείη seems to mean a rational system of relations, regarded as embodying the truth, which may serve as a body of doctrine. Those who have failed of such instruction, our author says, go quite as much astray as those who lack native endowment. Both are stripped of their pretensions and are clothed with dishonor; for theory (λόγος) must follow practice gained under proper instruction. He then adds:

πᾶν γὰρ τὸ ποιηθὲν τεχνικῶς ἐκ λόγου ἀνηνέχθη. Here I find it difficult to believe that ἐκ λόγου is correct, unless, as seems not unlikely, we are to supply <ἐς λόγον> after it. In that case τὸ ποιηθὲν τεχνικῶς ἐκ λόγου would be roughly the equivalent of the preceding ἐκ τοῦ διδαχθέντος ἔργου (cp. also ἔργον τὸ ἐκ μαθήσιος, below), and we should require the addition of ἐς λόγον with ἀνηνέχθη: "everything done under rational instruction in accordance with the laws of an art is referred to a rational principle." In the following I prefer to read κεκτημένοισιν with Corais, and to change ἀπέδειξεν to ἀπέδειξαν and αὐτοὺς to αὐτούς.

The last sentence of the chapter is perhaps past remedy. The best guess I can make is this: καίτοι γε τοιαύτη ἡ πρόρρησις ἀναπηγόρητος. ἡ σύνεσις ὁμογενής ἐστίν· εὐθὺς τὸ πέρας ἐμήνυσσε γνῶσιν· ὧν δ' ὁ χρόνος τὴν τέχνην ἐναργέα κατέστησε, καὶ τοῖσιν ἐς τὴν παραπλησίην οἶμον ἐμπίπτουσι τὰς ἀφορμὰς <εὐ> δήλους ἐποίησε. "And yet such a prognostication as this is indefensible. All wit is akin. Achievement straightway proves knowledge. Where time has made plain an art, it makes obvious even to those who fare by a different but similar way their proper points of departure." It will be noted that I propose ἀναπηγόρητος (= ἀναπολόγητος) for the unsuitable word ἀπαρηγόρητος; substitute εὐθὺς for εὐθύ, and γνῶσιν for γνῶσις; and read ἐναργέα for Littré's εὐδοέα, καί, with Zwing., for ἡ, and εὐδήλους for δήλους. The MSS. have εὐαδέα and εὐώδεα. Littré's εὐδοέα is not found elsewhere and, as Ermerins remarks, we should have had εὐοδον; but ἐναργέα is to my mind in itself better and occurs in Παραγγελίαι, I (9, 252 L.) ἐξ ἐναργέος ἐφόδου. At best we have an unsatisfactory text.

5 (9, 232 L.) διὸ δεῖ ἀναλαβόντα τουτέων τῶν προειρημένων ἕκαστα, μετὰγειν τὴν σοφίην ἐς τὴν ἱητρικὴν καὶ τὴν ἱητρικὴν ἐς τὴν σοφίην. ἱητρὸς γὰρ φιλόσοφος ἰσόθεος.

Ermerins and others have pronounced this statement absurd. Be that as it may, it is more important to understand the feeling of our author than to indulge our own. In order to do so we need only to compare Arist., *De Respiratione*, 21, 480<sup>b</sup> 22 περὶ δὲ ὑγιείας καὶ νόσου οὐ μόνον ἐστὶν ἱατροῦ ἀλλὰ καὶ τοῦ φυσικοῦ μέχρι τοῦ τὰς αἰτίας εἰπεῖν. ἡ δὲ διαφέρουσι καὶ ἡ διαφέροντα θεωροῦσιν, οὐ δεῖ λανθάνειν, ἐπεὶ ὅτι γε σύνορος ἡ πραγματεία μέχρι τινός ἐστι, μαρτυρεῖ τὸ γινόμενον· τῶν τε

γὰρ ἰατρῶν ὅσοι κομφοὶ ἢ περιέργοι, λέγουσί τι περὶ φύσεως καὶ τὰς ἀρχὰς ἐκείθεν ἀξιούσι λαμβάνειν, καὶ τῶν περὶ φύσεως πραγματευθέντων οἱ χαρτέστατοι σχεδὸν τελευτῶσιν εἰς τὰς ἀρχὰς τὰς ἰατρικὰς, and Arist., *De Sensu*, I, 436<sup>a</sup> 17 φυσικοῦ δὲ καὶ περὶ ὑγείας καὶ νόσου τὰς πρώτας ἰδεῖν ἀρχάς· οὔτε γὰρ ὑγίειαν οὔτε νόσον οἶόν τε γίνεσθαι τοῖς ἐστερημένοις ζωῆς. διὸ σχεδὸν τῶν τε περὶ φύσεως οἱ πλείστοι καὶ τῶν ἰατρῶν οἱ φιλοσοφωτέρως τὴν τέχνην μετιόντες, οἱ μὲν τελευτῶσιν εἰς τὰ περὶ ἰατρικῆς, οἱ δ' ἐκ τῶν περὶ φύσεως ἄρχονται περὶ τῆς ἰατρικῆς. It must be evident that there is something wrong with the last sentence of the second passage. The first passage enables us to see clearly what Aristotle had in mind, but in spite of the close parallel I have thus far been unable to derive from it a satisfactory correction of the second. Probably there is a lacuna between ἄρχοντα and περὶ τῆς ἰατρικῆς. We have seen above (p. 156, sq.) instances of ἰατροὶ κομφοὶ ἢ περιέργοι who derived their principles from a general philosophy of nature. That philosophy is θεῖόν τι καὶ δαιμόνιον ὄντως χρήμα is the opinion not only of the author of the Pseudo-Aristotelian *Περὶ κόσμου* (391<sup>a</sup> 1), but also of Plato and Aristotle. That *Περὶ εὐσχημοσύνης* is a treatise of the Aristotelian or post-Aristotelian age is unquestionable; but such opinions were clearly held much earlier.

If one inquires just what could have led our author to call the physician a godlike philosopher, an answer not devoid of interest is suggested by the context. It is obvious that by a physician he means in this connection the ideal physician who, as we have seen, must in his person as in his preparation unite theory and practice. By a philosopher, in turn, our author intends of course the *φυσικός*, or philosopher of nature, and our quotations from Aristotle, as well as the numerous passages cited elsewhere in this article sufficiently prove the close association of *ιατρική* and *φυσική* to the scientists of the time. If then the physician is singled out as a godlike philosopher, it is obviously in contrast to the *φυσικός*, and the natural assumption is that he is so distinguished just because, in the opinion of our author, he is able to accomplish results as well as construct theories. This the *φυσικός*, who was interested pre-eminently in τὰ μετέωρα, obviously could not do; for he was foredoomed to confine himself to theory. It will be recalled that, according to Xenophon, *Mem.*, i, 1, 11, Socrates regarded the *φυσικός* as foolish for troubling



himself about such matters. Of especial interest in this connection are the words of Xenophon, *ibid.*, i, 1, 15 ἐσκόπει δὲ περὶ αὐτῶν καὶ τὰδε, ἄρ', ὥσπερ οἱ τάνθρώπεια μαθάνοντες ἡγοῦνται τοῦθ' ὅ τι ἂν μάθωσιν ἑαυτοῖς τε καὶ τῶν ἄλλων ὅτω ἂν βούλωνται ποιήσῃν, οὕτω καὶ τὰ θεῖα ζητοῦντες νομίζουσιν, ἐπειδὴν γνῶσιν αἷς ἀνάγκαις ἕκαστα γίγνεται, ποιήσῃν, ὅταν βούλωνται, καὶ ἀνέμους καὶ ὕδατα καὶ ὥρας καὶ ὅτου ἂν ἄλλου δέωνται τῶν τοιούτων, ἢ τοιούτον μὲν οὐδὲν οὐδ' ἐλπίζουσιν, ἀρκεῖ δ' αὐτοῖς γινῶναι μόνον ἢ τῶν τοιούτων ἕκαστα γίγνεται. In the heyday of dawning science, ancient and modern, extravagant hopes of its practical results were entertained, as by Empedocles, Descartes, and others. See my *Περὶ Φύσεως*, p. 126 sq. One might conclude that our author lived in the age of the ἐπίγονοι, when disillusionment had ensued. Yet even Aristotle had his dreams!

#### ΠΑΡΑΓΓΕΛΙΑΙ

2 (9, 252 L.) τῶν δ' ὡς λόγου μόνου ξυμπειραινόντων μὴ εἶη ἐπαύρασθαι, τῶν δὲ ὡς ἔργου ἐνδείξιος.

I cannot believe that the writer wrote ὡς: probably we should write ἐκ and ἐξ instead, or we should insert <ὄντος> after μόνου.

*Ibid.* (9, 254 L.) οὕτω γὰρ δοκέω τὴν ξύμπασαν τέχνην ἀναδειχθῆναι, διὰ τὸ ἐξ ἐκάστου τοῦ τέλους τηρηθῆναι καὶ ἐς ταῦτ' ἐκταλίσθῆναι.

Here we must clearly write τὸ τέλος ("the issue") for τοῦ τέλους. Ermerins also reached the same conclusion.

*Ibid.* προσέχειν οὖν δεῖ περιπτώσει τῇ ὡς ἐπιτοπολύ, καὶ μετ' ὠφελίης καὶ ἡρεμασιότητος μᾶλλον ἢ ἐπαγγελίης καὶ ἀπολογίης τῆς μετὰ πρήξιας.

Here Ermerins writes τῇ περιπτώσει τῇ and μετ' ἀπρηξίης. Both changes may be justified, but they are unnecessary. As to περιπτώσει, I think it refers, like διὸ καὶ καθόλου δεῖ ἔχεισθαι τῶν γινομένων earlier in c. 2, to occurrences, and here specifically to what generally occurs in experience. The use of περίπτωσις here and in c. 1 (9, 252 L.) ξυγκαταίνεω μὲν οὖν καὶ τὸν λογισμόν, ἥνπερ ἐκ περιπτώσιος ποιῆται τὴν ἀρχήν, καὶ τὴν καταφορὴν ἐκ τῶν φαινομένων μεθοδεύη, is, I think, clear evidence of the late date of our treatise. Littré has referred to Diog. Laert., X, 32 for the Epicurean use of the term, and one

may find the word and its congeners frequently employed in Sextus Empiricus and in other late authors, always in a clearly defined epistemological sense. It is plain, however, that we do not have in our treatise the fully developed terminology of Epicurus, and we are perhaps not justified in dating it quite so late as that would require. In view of this fact it may not appear too fanciful if I suggest that the author of our treatise (and of *Περὶ εὐσχημοσύνης*) may be reproducing the views of Nausiphanes, from whose *Τρίπους* Epicurus is accused of having pilfered his *Κανών*, especially as he was clearly the first philosopher who formulated in detail the epistemological theory that starts with sensations, and was recognized as the forerunner of the empirical school in medicine.

There is one change which I would suggest in the text of our passage. Some MSS. read *ὠφελείης* instead of *ὠφελίης*, and I would propose *ἀφελείης*, which seems to suit the context better. One may defend *ὠφελίης*, however, as a reminiscence of *Περὶ ἄρθρων*, 44 (4, 188 L.) *αἰσχροὺν μέντοι καὶ ἐν πάσῃ τέχνῃ καὶ οὐχ ἥκιστα ἐν ἰητρικῇ πολλὴν ὄχλον καὶ πολλὴν ὄψιν καὶ πολλὴν λόγον παρασχόντα, ἔπειτα μηδὲν ὠφελήσαι.*

4 (9, 256 L.) *ἐπιμελεῖσθαι οὖν οὐ δέῃ περὶ στάσιος μισθοῦ.*

Possibly *στάσιος* may be allowed to stand, in the sense of 'fixing,' 'determining,' but I suspect that the writer said *ίησιος* (*ιάσιος*) *μισθοῦ*.

7 (9, 260 L.) *ἐφ' οἷς ἂν ἰητρός ἀκμάζοι ὁμότεχνος καλεόμενος.*

This text, though supported by the MSS. and accepted by Ermerins, appears to me subject to grave suspicion. I have thought of various possibilities. First, one might change *ὁμότεχνος* to the accusative, making it the object of *καλεόμενος*, "Where a true physician would appear at his best in calling into consultation with him a brother physician." But the sentence seems to be a reminiscence of *Περὶ ἀρχαίης ἰητρικῆς*, 7 (1, 584 L.) *ὁ καλούμενος ἰητρός καὶ ὁμολογεόμενος χειροτέχνης*. If this be true, the corruption is probably more serious, and it would be idle to attempt a restoration of the text.